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THE PREVENTION AND TREATMENT OF ASPHYXIA IN THE NEW-BORN *

YANDELL HENDERSON, PH.D.

NEW HAVEN, CONN.

The first quarter of an hour after birth is the most dangerous period of life. Its mortality is as great as that of any subsequent month. No single discovery in medical science or improvement in practice could do more to save lives than would measures to avoid the losses that now occur within a few minutes after birth.

There are probably no procedures in medical practice which are so nearly the same as those of the dark ages, or which have as yet been influenced so little by modern scientific knowledge, as those of the midwife or obstetrician in dealing with a nonbreathing new-born child. Perhaps an excuse may be found in the statements still contained in textbooks of physiology and obstetrics regarding the questions why the fetus does not breathe in the uterus, and why it does start to breathe after birth. This topic is generally discussed rather philosophically, and so might be left to the merely philosophical if it were not that some of the statements in these discussions afford a basis for most unfortunate results. Thus, in such accounts stress is laid on the effects of exposure to cold air and the stimulation of the skin by contact with objects in the outside world. Such a notion having been implanted in the mind of the obstetrician, it then becomes the basis for plunging the child into cold water or applying a vigorous spanking. The new-born baby may be swung vigorously by the feet, squeezed and pulled and manhandled. The results are frequently serious, and probably in rare cases may even involve fatal organic injury. Such practices arise from the same mistaken idea as those of the so-called countershock treatment sometimes applied in the resuscitation of men partially drowned, electrically shocked, or asphyxiated by gas.

In the application of countershock, the victim of the accident is dropped on the ground, sometimes from a height of several feet, beaten on the soles of the feet, and in other ways handled with extreme roughness in the belief that such irritation of afferent nerves may stimulate a renewal of breathing. In fact, all that is really accomplished is that the patient has an added injury, sometimes severe, from which to recover. Similarly, in rural districts the belief still obtains that a drowned person can be resuscitated by the use of a corn cob, the larger and rougher, the better. It is fairly certain, however, that any person who breathes again after the application of such resuscitation apparatus would have breathed without it; he retains only an injured anus. Essentially the same brutal procedure is sometimes even now resorted to by anesthetists as a means of stimulating a patient who has stopped breathing under anesthesia.

Equally crude, ineffective and reprehensible is the treatment which ignorance and immemorial custom tolerate and even recommend for the nonbreathing new-born child. Such practices in all fields of resuscitation, alike for adults and for infants, are based on essentially the same erroneous conception of the physiologic conditions producing breathing. It is extraordinary how long such errors persist. For more than ten years now every young medical student has heard an explanation of the chemical control of respiration by a professor of physiology and has then gone on to clinical work to forget it. He adopts and applies the hoary errors of the clinic in regard to respiration.

In answer to the theoretical question why the fetus in the uterus does not breathe, it is sufficient to say that the reason is that the conditions of the circulation and the exchange of the respiratory gases in the blood are such as do not stimulate the respiratory center. Respiration does not occur because no chemical stimulus of sufficient strength develops in the blood and is brought to bear on the center.[1]

After birth the infant breathes in response to the same stimulus and by the same mechanism as those which the modern physiology of respiration has shown obtain in adults, in children, and in all mammalian animals. In all these, and in the infant no less, the maintenance and regulation of breathing depend on the carbon dioxide brought to the respiratory center in the blood. Oxygen is requisite if the center itself is to be maintained in normal condition, and if the tissues are to produce carbon dioxide, for deprivation of oxygen necessarily decreases the production of carbon dioxide. But the center may be quite normal and also quite inactive in the presence of ample oxygen if the blood is deficient in carbon dioxide. If the center has become inactive, or if its activity is subnormal, there is one, and only one, stimulus that will both restore and maintain normal activity: an increase of carbon dioxide in the blood.

This is true physiologically, and it is equally true therapeutically. It is now many years since physiologists have given up the idea that respiration is essentially due to afferent stimulation,[2] and have adopted the conception of Haldane[3] and his co-workers. From

* From the Laboratory of Applied Physiology, Sheffield Scientific School, Yale University.

1. Miescher-Rusch: Arch. f. Physiol., 1885, p. 355.
2. Heymans, J. F., and Heymans, C.: Sur les modifications directes et sur la régulation réflexe de l'activité du centre respiratoire de la tête du chien, Arch. internat. de pharmacod. **33**: 273, 1927.
3. Haldane, J. S.: Respiration, New Haven, Yale University Press, 1922.

their work and that of others who have confirmed and extended it, it is as certain as anything in the whole range of modern science that respiration is under a chemical control by the more or less direct action of the arterial blood, chiefly through its content of carbon dioxide, on the respiratory center in the brain. It has been proved also that oxygen is not a stimulant, a fact which clinicians seem to find extremely hard to appreciate, for they are continually trying to stimulate respiration with oxygen. The combustion in the human body is not like a fire which burns more or less vigorously according to the supply of oxygen. Slight deficiency of oxygen is to some extent a stimulant, but only for a short time. The stimulation passes readily into a depressant effect if the deprivation is acute or prolonged.[4] Oxygen is an essential foodstuff. Without oxygen the tissues cannot produce carbon dioxide. Asphyxia is usually thought of as a condition of oxygen deficiency and excess of carbon dioxide. This is a misconception; asphyxia usually, as in the typical condition of carbon monoxide poisoning, involves both low oxygen and low carbon dioxide content in the blood and tissues.

Thus the practical problem of the initiation and stimulation of respiration in a nonbreathing new-born child is very nearly the same as that of the resuscitation of an adult who has been partially asphyxiated. On the subject of resuscitation, knowledge and experience have now reached a very satisfactory degree of completeness.[5] The theory is well established, and has been confirmed by numerous laboratory tests. Apparatus has been developed for practical use and has proved its effectiveness by a wide distribution and application. There are now also records of large numbers—numbers rising into many hundreds—of successful resuscitations.[6]

In addition, there is direct evidence that the asphyxia of the new-born and of an adult overcome by an asphyxiant gas are effectively relieved by essentially the same treatment. This evidence has developed in a somewhat peculiar manner as follows: During the last twenty years, my associates and I[7] have kept up a nearly continuous campaign of propaganda for the practical application of the modern theory of respiration. What we have urged is, in a word, the immense possibilities for the saving of life available in the therapeutic use of inhalations of carbon dioxide diluted in air or in oxygen. Criticism from some of the older school of physiologists—those who still believed in the afferent control of respiration—was not wanting ten or fifteen years ago, but such opposition has now long since completely ceased. More recently some biochemists have objected to inhalations of carbon dioxide diluted in air or oxygen on the score of "intensifying an already existing acidosis"; but that objection also seems to have died away.[8]

Meanwhile, anesthetists generally have become acquainted with the modern conception of respiration, and as a result they are making extensive use of carbon dioxide,[9] mixed either with oxygen or with the anesthetic gases, as a means of controlling respiration during the initiation and maintenance, and for the rapid termination of anesthesia. In the hospitals with which such progressive anesthetists are associated there are now large and rapidly increasing numbers of cases recorded in which the obstetric department has called on the anesthetist for assistance, and he has started the new-born baby breathing in the only really effective and scientific manner, by an inhalation of oxygen and carbon dioxide. But the total number of children born in hospitals that have reached this degree of scientific advancement is extremely small compared to the number of lives lost, because in most places no such up-to-date assistance is available. It is certainly a very unfavorable comment on the art of midwifery that obstetricians do not as yet seem to have availed themselves of an acquaintance with the modern physiology of respiration, or to have provided themselves with the simple means necessary for putting it into effect. And yet there is probably more frequent need for resuscitation apparatus in this field than in any other. From such estimates as I can obtain, this apparatus would make a difference of one life in a hundred and it must be kept in mind that birth is a hazard through which all must pass. Thus, if this estimate is correct, the total number of lives to be saved by the introduction of such simple and easily practicable means would be greater than would result from the complete elimination of some of the diseases of infancy and childhood, such as poliomyelitis and epidemic encephalitis.

Although obstetricians have not as yet made more than the faintest beginning along this line, nevertheless through nonmedical channels in a roundabout and surprising manner the application is being made and is saving a great number of lives. What obstetricians have neglected to do for themselves they are enabled to bring about in many American cities today by calling in the city fire department. The rescue squads of the fire departments bring in their inhalators and start the baby breathing. Thus the fire department of one city now reports a large number of such resuscitations in a little more than a year.

In the course of the propaganda which my associates and I have carried on for the therapeutic use of carbon dioxide, it became clear, after about ten years of rather ineffective effort on my part, that little could be accomplished for the resuscitation of the victims of gas asphyxiation if our educational efforts were confined to the medical profession. Often the physician reaches the patient too late. Hospital boards are slow to buy and equip ambulances with inhalators, although all emergency ambulances should be so equipped. Accordingly, Dr. H. W. Haggard and I,[10] acting for a committee of which Dr. C. K. Drinker was chairman, devised, tested and introduced a suitable inhalator. As the result of a prolonged campaign of education, some thousands of inhalators are now in the hands of coal mining companies, city gas companies, chemical manufacturers and city fire departments, and are on a few hospital ambulances.

4. Henderson, Yandell; and Haggard, H. W.: Noxious Gases and the Principles of Respiration Influencing Their Action, New York, American Chemical Society Monograph Series, 1927, chapters 2 and 7.

5. Henderson, Yandell: Resuscitation, J. A. M. A. **82**: 758 (Sept. 6) 1924.

6. Drinker, C. K.: The Efficiency of the Oxygen-Carbon Dioxide Treatment of Carbon Monoxide Poisoning, J. Indust. Hyg. **7**: 539 (Dec.) 1925.

7. Henderson, Yandell: Fatal Apnea and the Shock Problem, Bull. Johns Hopkins Hosp. **21**: 235, 1910. Henderson, Yandell; and Haggard, H. W.: The Elimination of Carbon Monoxide from the Blood After a Dangerous Degree of Asphyxiation, and a Therapy for Accelerating the Elimination, J. Pharmacol. & Exper. Therap. **16**: 11, 1910; The Treatment of Carbon Monoxide Poisoning, J. A. M. A. **77**: 1065 (Oct. 1) 1921. Henderson, Yandell: Respiration in Anesthesia, and the Absorption and Elimination of Volatile Substances Through the Lungs, Brit. M. J. **2**: 1170 (Dec. 19) 1925; **1**: 41 (Jan. 9) 1926.

8. Henderson, Yandell: Physiological Regulation of the Acid-Base Balance of the Blood and Some Related Functions, Physiol. Rev. **5**: 131 (April) 1925.

9. Lundy, J. S.: Carbon Dioxide as an Aid in General Anesthesia, J. A. M. A. **85**: 1953 (Dec. 19) 1925. See also on this subject numerous communications by various anesthetists in Current Researches in Anesthesia and Analgesia.

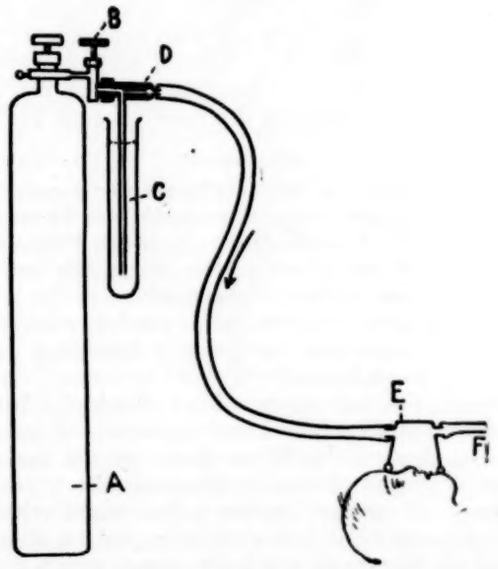
10. Henderson, Yandell; and Haggard, H. W.: Report I of the Commission on Resuscitation from Carbon Monoxide Asphyxia: The Treatment of Carbon Monoxide Asphyxia by Means of Oxygen and Carbon Dioxide Inhalation, J. A. M. A. **79**: 1137 (Sept. 30) 1922.

The success of such apparatus for its primary purpose of resuscitation of the victims of gas asphyxiation has been extensive. In addition, and quite unforeseen, has been the application of the same treatment to saving the lives of the new-born. This happens in the following manner, and not once only but repeatedly in every city where these inhalators are introduced: Cases of gas asphyxiation occur; the rescue crew of the fire department is called and resuscitates the patient. A physician sees the resuscitation, and is impressed by the effectiveness of the treatment. Some time thereafter he finds himself confronted with a child which he has delivered, and which has come through a prolonged labor. It refuses to breathe effectively, in spite of the application of all the ancient practices. The respiratory center has been depressed by the diminished blood supply to the brain resulting from compression of the head, and needs more than the normal amount of carbon dioxide to stimulate breathing. So the physician calls in the fire department. If, as is often the case, the fire department succeeds where his medical skill and knowledge have failed, he calls for it again the next time. Now the hospitals in some cities are adopting the practice of calling for the inhalator of the fire department whenever they have a baby who breathes poorly. In effect, they add the rescue crew of the fire department to their board of consultants, and these new consultants thus contribute another service to the community over and above that for which the fire department is primarily organized. Obviously, it is the hospitals that should be equipped to treat asphyxia—asphyxia of every form—and thus to help firemen overcome by smoke and gas, instead of relying on the fire department to help the hospital in such a matter as asphyxia of the new-born.

Turning now to specific points in the treatment of the nonbreathing baby, the negative factors, the things that should not be done, may first be specified. The baby should not be handled or treated with even the slightest degree of roughness, but on the contrary as gently, and with as little irritation and injury as possible. It should certainly not be allowed to get cold, much less "stimulated" by being plunged in cold water. Nor should it be subjected to certain other ancient and unphysiologic procedures, such as the still common practice of allowing an appreciable amount of blood to flow from the cord before it is tied. No blood that can be saved to the child should be lost, for it will be many months before its food contains an appreciable amount of iron.

As to the positive factors, the things that should be done: The child should be carefully kept warm, for it has not yet developed its own heat regulating functions. If the child has not itself spontaneously expanded its lungs by the first cry and does not then continue to breathe normally under the stimulus of its own blood gases, there are two and only two things that the obstetrician should do; there are in reality only two things that it is possible for him to do in order to help. The first form of assistance is to inflate the lungs a few times slowly and gently. For this purpose, air from the obstetrician's own lungs may be used, as has been the practice ever since the days of Elisha.[11] But it is better to use oxygen containing 5 or 6 per cent of carbon dioxide, or perhaps even with a higher percentage of the stimulating carbon dioxide. The second measure of assistance is then to continue to administer an inhalation of the mixture of oxygen and carbon dioxide as long as respiration is subnormal without it. If the respiratory center is incapable of normal activity under these conditions, no amount of irritation of the afferent nerve endings in the skin will induce continuing respiration. As a stimulant to respiration, nature offers carbon dioxide, but no alternative drug or treatment. Practically, it is the only effective stimulant for maintaining breathing.

The administration of oxygen alone, either for the inflation of the lungs or for inhalation, is far less effective than oxygen plus carbon dioxide, for oxygen does not have a stimulating action on respiration. Artificial respiration is to be avoided aside from the few initial inflations. Even these inflations should be gentle; there are strong objections to such artificial respiration apparatus as the pulmotor or lungmotor, for they are inevitably applied neither gently nor moderately. The person applying them invariably undertakes to do the breathing for the patient, whereas the correct objective is to get the patient as soon as possible to breathe for himself. Even with a simple device for inflating a



A simple and (properly used) safe form of infant inhalator. The cylinder (*A*) filled with oxygen and 5 per cent carbon dioxide, may be only an inch in diameter and 10 or 12 inches long. Attached to it is a reducing valve, or, as shown here, a special needle valve (*B*) fine enough for careful adjustment of the flow of the gas mixture. The large test tube (*C*) is 6 inches long, of heavy glass, and filled to a mark with water. The vertical tube downward from the T serves as a pressure gage and escape whenever the pressure exceeds a maximum of 3 inches of water column. The capillary tube (*D*) just beyond the T is about an inch long and of such small diameter that under the maximal pressure allowed by the manometer only about a liter of the gas mixture a minute can pass to the face mask (*E*) and on out through the escape tube (*F*) at the right. For inflating the lungs, the escape tube is closed between the fingers for two or three seconds. This is essentially the same type of apparatus as that previously described by Henderson, Haggard and Coburn (The Therapeutic Use of Carbon Dioxide After Anesthesia and Operation, J. A. M. A. **74**: 783 [March 20] 1920), a type embodied in some of the anesthesia apparatus now widely used (Foregger, R. V.: Percentages and True Flow of Gases for Gas-Oxygen Anesthesia, Current Researches in Anesthesia and Analgesia **6**: 225, 1927).

child's lungs, the operator must be warned not to overdo inflation either in volume or in pressure. The only safe rule is not to use an apparatus with which it is possible to overdo artificial respiration. If use is made of the pressure from a cylinder containing oxygen and carbon dioxide, it must be remembered that the pressure within the cylinder is many atmospheres whereas that which can safely be administered to the child is only one one-hundredth of an atmosphere.

In this matter I hesitate to suggest any precise form of apparatus, for it is best that the men who are actually working under clinical conditions should develop the

11. The Bible, II Kings, 4:32.

apparatus and be guided continually by their experience with it. Merely as a suggestion, and following closely a type of apparatus already in successful use, the accompanying diagram shows in principle one possible simple device. But any one of the common anesthetic inhalers having a rubber bag will also serve. For the mask, the nose piece used by dentists is a convenient size for the infant's face. The lungs are expanded by gently compressing the bag, as described by Sword.[12] Neither of these forms of apparatus includes anything new. Both could be made small and light enough to be carried in an overcoat pocket. Doubtless both can be much improved, especially for hospital use, where weight is unimportant; for instance, a convenient device developed by Joseph Kreiselman, H. F. Kane and R. B. Swope[13] is now in successful use in Washington, D. C. Every anesthesia machine for nitrous oxide, ethylene, and so on, should have an attachment for the inhalation of oxygen and carbon dioxide for the new-born, in order that the anesthetist who relieves the pains of the mother may also start the baby breathing.

But until hospitals and outside obstetricians are provided with such apparatus and with cylinders of oxygen and carbon dioxide, they will do well to remember, when the baby does not breathe, that the fire department in every progressive city now has such equipment.

SUMMARY

Failure of the new-born to breathe or a condition of insufficient natural respiration should not be treated by the old-fashioned methods of cutaneous "stimulation." Such methods are essentially unphysiologic and harmful. They are probably also ineffective in all cases except those in which inflation of the lungs alone would have been sufficient to initiate breathing without additional "stimulation."

Resuscitation of the new-born should be based on the modern conception of the regulation of respiration by the action of the blood gases on the respiratory center. Oxygen is not a stimulant but a foodstuff. Deficiency of oxygen, beyond a first slight stimulating effect, depresses the nerve centers. In the absence of oxygen the tissues of the body cannot produce carbon dioxide. It is the carbon dioxide carried by the blood from the tissues to the brain that is the physiologic stimulant to respiration. When the center is depressed, it requires more than the normal amount of this stimulant to induce activity.

Compression of the head and the consequent decrease of the supply of blood to the brain during prolonged labor depress the respiratory center, so that after delivery the center does not receive a chemical stimulus sufficient to overcome this depression. Because of this condition of the center, the first cry does not occur, and the lungs remain atelectatic. In order to start respiration, a gentle inflation with oxygen and carbon dioxide for two or three seconds three or four times a minute should be applied. As soon as natural breathing develops, the inflations should be stopped, but inhalation of this gas mixture should be continued until full breathing is established. This is not only the physiologic and therefore best method; in its essential features it is really the only possible method that nature and science offer.

4 Hillhouse Avenue.

12. Sword, B. C.: Clinical and Laboratory Advantages of Carbon Dioxide in Anesthesia, Current Researches in Anesthesia and Analgesia 6: 177 (Aug.) 1927.

13. Kreiselman, Joseph; Kane, H. F., and Swope, R. B.: Personal communication to the author.

THE NONTUBERCULOUS CHILD*

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The pediatrician is a general practitioner to the young, a chronologic, and not a regional specialist. We have not, therefore, that incisive special knowledge concerning the diagnosis of pulmonary tuberculosis that the specialist in tuberculosis has. We sit in proper awe, possibly a little skeptical at times, but only wholesomely so, as you unravel the mysteries of a suspected chest with that peculiar precision that you have acquired and that we, and I might include not a few internists, frankly do not possess. If we sometimes feel that an immediate autopsy might be instructive it is only because of that reasonable skepticism that is imposed on every intelligent clinician by the still existing limitations to unfailing diagnosis in chest conditions, that makes it still rather an art than a science. I shall not therefore "bring coals to Newcastle" by dwelling on finer points of diagnosis but will attempt as a pediatrician, speaking before a body of men interested especially in tuberculosis, to tell you what a pediatrician has in mind and thinks he ought to say on an occasion like this, with especial emphasis on the child that might have, but does not have, tuberculosis.

It is one of the pediatrician's frequent experiences to have brought to him a child whom the mother has anxiously suspected of having tuberculosis of the lungs. In the great majority of cases her suspicions are unfounded clinically. Her fears are commonly based on one or more of the following points:

1. The child is underweight, whatever that may be; and is, or is not, run down, easily fatigued, and lacking in "pep."
2. He has a persistent cough.
3. He has a persistent low-grade temperature slightly above the accepted normal.
4. He has had a "pneumonia" and still has a fever and pathologic changes in the lungs.
5. He has been suspected of having tuberculosis of the lungs by his physician and this suspicion has been confirmed by a positive Pirquet test or a roentgen-ray diagnosis.
6. He has been exposed to tuberculosis.

It will perhaps not be amiss to take up these points seriatim. Before doing so, however, I should like to stress two points: the positive value of an examination of the sputum if it is positive, and the equally positive value of a Pirquet test if it is negative. Examination of the sputum is omitted more often than it should be because of the assumed difficulty or impossibility of getting a serviceable specimen from a young child who has not yet learned to spit. As a matter of fact, the procuring of a specimen is a very simple matter even in the baby. Immediately after a coughing spell, either spontaneous or induced by faucial irritation, the throat is swabbed low down and the specimen transferred to a slide. While the field of usefulness of this procedure is limited in childhood, it is sometimes of decisive value in the child with a persistent, productive cough without definite lung changes, and in the child with marked lung findings that may or may not be tuberculous in origin. In the present discussion of the nontuberculous child, examination of the sputum does not play a prominent part because it is of value only in establishing a diagnosis of tuberculosis and that too late, and of little or no value in excluding it.

* From the Children's Memorial Hospital.
* Read before the Mississippi Valley Conference on Tuberculosis, St. Louis, Sept. 20, 1927.

Exactly the opposite is true of the Pirquet test. I use the term "Pirquet test" in a generic sense as including the other special tests. It is the one most commonly employed and to my mind the most generally serviceable. It may be a fraction less delicate than the intracutaneous test, but I doubt the practical value of that fraction. The Moro test is probably more uncertain and the Calmette test is fortunately no longer in use. If the Pirquet test is positive it tells us that the child has a tuberculous infection, but it does not tell us that that infection has any clinical significance or has any bearing whatever on the condition that brings the child for examination. In the older child the positive test may mean relatively little, but considerably more than it does in the adult. Per se it may have no value; in a proper clinical setting it may be decisive. In the infant it is always ominous because it means an active tuberculosis and we all know what that means in an infant. The baby with a positive Pirquet test should be regarded as a tuberculous patient and if properly treated his chances are good if there is no other evidence of tuberculosis, even in the first few months of life. In my experience a negative Pirquet test, on the other hand, for all practical purposes excludes tuberculosis at any age. The only exceptions are certain infections such as measles, sometimes a massive terminal tuberculosis, more often a miliary tuberculosis toward the end, and quite commonly a tuberculous meningitis, but all of these rarely offer any serious difficulties in diagnosis. If all of this is correct, and I am convinced that it is, the value of a negative Pirquet test and the desirability of occasionally employing it in the type of case we are now interested in, both for its diagnostic and for its psychologic value, would seem to be evident. I would by no means advocate a frequent resort to that test except for the pedagogic value of a routine test in a hospital where the parents are absent. It is not right to demonstrate to a mother's eye that the child has a tuberculous infection that has for all practical purposes no clinical counterpart. In making the test one must, of course, be familiar with the proper technic and also with the fact that not all tuberculin is potent, as we have learned from experience. A negative reaction can be accepted only if repeated, and if the material is of known potency.

"Underweight" and a run-down condition are clearly indications for investigation. So-called underweight, as if any one knew in a given case what the proper weight should be, has per se no significance. While the widespread propaganda of weighing and measuring all children has led to the unearthing and removing of many causal defects, such as diseased tonsils and adenoids, carious teeth, or faulty habits and hygiene, it has also caused many a needless heartache. Children are individuals, physical as well as mental. The greyhound and the airedale are as healthy, normal and efficient as the mastiff and the St. Bernard. Some children are "skinny" because they are active, and active because they are "skinny"; others are phlegmatic because they are fat or fat because they are phlegmatic. There is no reason in health, other things being equal, why one should be converted into the other or why the two should be brought to a common artificially determined medium. The very mother who brings her child because he is so thin and shapeless is probably doing all she can just now to be as nearly like him as is humanly possible. I think it is a well grounded pediatric conviction that the thinner, active child is a better health risk than the fat, phlegmatic child and, at least, an equal risk with the so-called normal weight child. The thin, active child with a good appetite and a good color gets, but hardly requires, a thorough physical examination. His very activity and lack of fatigue exclude a clinical tuberculosis. The child, on the other hand, that is thin and run down, has a poor color and appetite, tires quickly and is manifestly sick requires the most careful scrutiny as to a possible tuberculosis by all helpful means, no matter what other abnormalities he may present.

It cannot be emphasized too strongly, on the other hand, that a normal weight and an apparently normal state of nutrition do not exclude tuberculosis. The baby with an extensive pulmonary tuberculosis may be of average weight, may even gain normally for weeks and months up to that inevitable rapid loss as the end approaches. And it is a melancholy and depressing fact that the child, young or old, that has a tuberculous meningitis, the result of a sudden hematogenous invasion from a previously insignificant and unrecognizable lesion, is as often as not an otherwise normal, even blooming, physical specimen. An intern recently asked me "Why is it that tuberculous meningitis always occurs in the healthiest looking children?" a question not wholly well founded, but, nevertheless, significant in this connection.

A persistent cough evidently requires careful investigation. Often the child will come with the story that he "coughs all the time," or that "he has had a cough for years." Careful inquiry will commonly reveal the fact that instead of a continuous cough the child has had frequent spells of cough lasting from a few days to a few weeks, or even a month or more. Further inquiry will often disclose that such attacks are ushered in suddenly by fairly high fever, a coryza, or a sore throat, or a cervical adenitis, or an otitis media, that leave no doubt that the child has had an upper respiratory tract infection. The child may still present one or the other of these at the time of examination. After such acute attacks children will often cough, and cough harassingly and nonproductively, for many weeks and yet appear in otherwise perfect health. The possibility of repeated attacks of bronchial asthma or asthmatic bronchitis as a cause of such coughs must be borne in mind, the nature of which may be unknown to the mother and also to the physician unless he sees the child in an attack. The story of frequent attacks of coughs over a period of years would lead me very strongly to lean away from a diagnosis of tuberculosis rather than toward it. A chronic tuberculous cough would be more apt to be continuous, not widely intermittent, and in a child would moreover almost surely be accompanied by fever, fatigue, pallor, localized fine râles, suppressed breathing or other lung conditions, all of which are regularly absent in the type of case I am considering. The reason for the absence of physical signs and of constitutional symptoms in these children is, I am inclined to think, to be found in a slight, superficial inflammation restricted to the throat, or to the trachea and larger bronchi, with perhaps occasionally a marked persistent nonspecific peribronchial lymphadenitis, any of which might stimulate the cough reflex. Clinically they often closely resemble a smoker's cough. Parenthetically, the fact that the tonsils and adenoids have been removed has no bearing on the subject. Coughs due to acute upper respiratory tract infections are about as frequent after tonsillectomy as before, and there is considerable evidence that, if anything, they are more persistent when they do occur. It

is the mucous membrane and not the tonsils and adenoids that are at fault, especially in the younger child. If any of these persistent coughs are productive or are accompanied by constitutional symptoms and physical conditions it of course becomes imperative to examine the sputum and to resort to all other helpful diagnostic measures. The diagnostic and psychologic effect of a negative Pirquet test is here often of great value.

A persistent type of cough is that due to bronchiectasis. The occurrence of infrequent prolonged spells of coughing, especially when brought on by change to a certain position, during which large amounts of thick fetid material are coughed up, leaves little doubt as to the diagnosis. The remaining doubt can now be settled by recent methods of pneumonography. Practically the same thing can be said about a lung abscess that is discharging through a bronchus.

The presence of a foreign body sometimes offers greater difficulties in this connection. It is surprising how often one fails to get the history of the classic onset with sudden violent coughing, choking and cyanosis. Often the only remaining symptoms when the child is seen are a wheeze, often unilateral, and a cough. The cough, too, as Chevalier Jackson has pointed out, is absent when the foreign body becomes firmly lodged and does not move. The roentgen ray will show only the denser bodies; it is those of vegetable origin that do not show and that are the most serious. Peanut candy furnishes a high percentage of foreign bodies, for obvious reasons. Such nonopaque foreign bodies can often be diagnosed from the symptoms and physical signs. A wheeze that is not evidently asthmatic should always be regarded as suggestive. An area of dulness with absent breath sounds, and especially absent breath sounds irregularly alternating with bronchial breathing and bronchophony, is practically diagnostic, in the proper clinical setting, of a collapsed or atelectatic portion of lung due to a plugged bronchus or to a bronchus that is alternately completely and partially plugged. The complete plugging of a main bronchus leads to absent breath sounds on the corresponding side, to absorption of air with retention of secretions, to solidification and contraction in volume of the affected portion, with drawing of the heart into the dull area, and an emphysema of the opposite lung. The roentgen ray furnishes a striking picture of this condition that is pathognomonic. Equally diagnostic is a lung that is hyperresonant on one side, with absence of breath sounds on the same side, and with the heart pushed to the opposite side. In this condition there is an obstruction due to a valvelike foreign body so placed that air is permitted to enter but not to escape.

When only one lobe, usually the lower right, or only a portion of one lobe, is completely obstructed, the diagnosis is a little more difficult. The roentgen ray will then often show a well defined wedge-shaped area of greater density. It is in these cases that the diagnosis is usually easily confirmed by a competent bronchoscopist and the therapeutic result is often little short of miraculous. The neglected case with a chronic cough, and localized moist lung conditions, often lasting for many years, can easily be confused with tuberculosis. In such cases the foreign body moves freely, is metallic in nature and can easily be found with the roentgen ray, and its removal even after many years leads to a prompt cure. I believe that ultimately the immediate cause of practically all cases of collapsed or acquired bronchiectatic lung will be found in the plugging of a bronchus. The most instructive case of this kind that I have ever seen was that of a child, reported elsewhere, that had three areas of collapse following a tonsillectomy, unquestionably due to the inhalation of shreds of tonsil, adenoid or blood clots, while the cough reflex was in abeyance because of anesthesia. Prompt cure followed one bronchoscopic treatment, though the child had had a high fever for four weeks.

A still more frequent cause of anxiety to the parents is a persistent low-grade temperature. I have myself had great difficulty in orienting myself as to what constitutes a normal temperature in a child. I find myself at one time quite concerned about a persistent temperature of 99 to 100 by rectum, and again, in a different clinical setting will find myself telling a mother to forget about it and to quit taking the temperature. In my experience a fairly persistent temperature of 99 to 99.5 and even occasionally 100 is many times more frequently due to some other condition than it is to tuberculosis. Such temperatures frequently occur after upper respiratory tract infections. I am free to confess that in the great majority of these cases I do not know the offending locus of infection if there is one. I am also inclined to believe that those who definitely, in a given case, locate the cause in a cryptic tonsil, a paranasal sinusitis, a latent mastoiditis, or a peribronchial lymphadenitis do not know any more about it than I do. I am not yet convinced that most of these things are not more or less normal or, at least, innocuous complications of most every fairly severe upper respiratory tract infection; that in most cases any active intervention is meddlesome, and that an apparent therapeutic result is usually a coincidence. When such a temperature occurs in an otherwise apparently healthy child in whom I cannot find lung or other evident pathologic changes, I dismiss the case with a mere warning. If a Pirquet test is negative, I dismiss it without a qualm. If, on the other hand, the temperature goes to 101, even on rare occasions, or if the Pirquet reaction is positive I put the child to bed as a sick child and search diligently for the underlying pathologic condition with a real interest in the possibility of a tuberculous infection.

A further cause for worry is the child that has had a pneumonia and now after weeks, perhaps months, still has a fever and pathologic changes in the lungs. Has he a tuberculosis or an unresolved pneumonia? If the child was under my observation at the beginning, the differentiation is simplified. If there was a frank pneumonia in a previously healthy child the chances are all in favor of an unresolved pneumonia. If the beginning was insidious and the date of onset not well marked, if the temperature was never over 101 or 102, or if there was a decided pleuritic pain, one more strongly suspects tuberculosis. A serous pleural effusion makes it almost positive. I have only twice encountered an abundant, clear serous effusion in an unquestioned nontuberculous pneumonia. The physical observations vary widely in the two conditions. In an unresolved pneumonia there is nearly always an extensive area of involvement, an abundance of fine to coarse, very loud and very moist râles, with definite dulness, bronchial breathing and bronchophony, all of which are at variance with the usual condition in a tuberculosis of comparatively short duration. In my experience, if a healthy child has had a definite pneumonia at the onset, the fever and physical conditions that persist often enough for weeks and even months will eventually clear up and are practically never due

to a superimposed tuberculosis. In unduly protracted cases, however, one naturally resorts to all the usual diagnostic procedures to exclude a possible tuberculosis.

More acute than any of these conditions is that in which the physician himself, because of fever, cough, a run down condition or what not, in lieu of something definite has suspected tuberculosis, has expressed his suspicions, and has had them confirmed by a Pirquet test or a roentgen-ray diagnosis. To the average mother such a procedure spells consumption. I have already discussed the negative .value of a positive Pirquet test and stressed the psychologic, tuberculophobic aspects.

I have so far said nothing about the roentgenologic examination in the diagnosis of chest conditions in children. At the Children's Memorial Hospital after examining a child and recording our observations we examine the roentgenogram in practically every case, often with the idea of settling a dispute. In what I shall say I want it definitely understood that I believe I am adequately impressed with the frequent confirmatory or nonconfirmatory, and the occasional absolutely determining value of a roentgenologic examination of the chest; and I need not express my deep respect for the experienced and candid roentgenologist who frankly and intelligently appreciates his limitations and acts accordingly. I am not now speaking of theory and of abstract values, but of a very concrete condition that exists. The idea that the roentgen ray is a final instrument of precision in the diagnosis of tuberculosis of the chest is not wholly restricted to the laity. Few physicians, unless they have an extensive hospital experience, feel competent themselves to interpret a roentgenogram. The roentgenologist is expected to render an opinion and that opinion becomes for all practical purposes a diagnosis, whether he intends it to be so or not. That diagnosis often enough leaves a scar that all our clinical experience and all our explanations cannot eradicate, and, from the very nature of things, explanations are sometimes difficult or even embarrassing. We are all of us familiar with the roentgenologist who has a veritable tuberculosis complex. Every hilum shadow that is denser or more extensive than an assumed normal, every area that is a little more mottled than is usual, intrigues him into a suspicion of tuberculosis, and in tuberculosis an expressed suspicion soon becomes a certainty. The question naturally arises, By virtue of what experience, or of what special learning has a roentgenologist a right to make a diagnosis of tuberculosis, or of its absence, in a given doubtful case? Surely a mere M.D. degree conveys no such license, and any amount of clinical experience helps little in a given case whose clinical history and physical signs he does not know. Has he even seen, or does he now see, autopsies on his patients? When he calls a certain denser shadow a "calcified" gland, with all the significance that that diagnosis carries with it, has he ever felt the grate of a knife through one? Can he, unaided by extensive clinical and autopsy experience in general, and in a given case in particular, tell whether apparently exaggerated hilum shadows are due to specific or to nonspecific involvement; whether a mottled density means tuberculosis in a given case; or whether a clearer area in denser shadow means a cavity, with all that that implies, or perhaps a failure to consolidate, or a rapid localized resolution, of a restricted area of pneumonic lung? In three successive patients in whom a very competent and conservative roentgenologist had made a positive diagnosis of tuberculosis, for good conventional reasons, the autopsy revealed not a trace of tuberculosis, and the Pirquet test had been negative in each. The diagnosing roentgenologist who sits before his screen and deals out the messages of life and death is not unlike Mencken's philosopher: "a man who unravels the mysteries of existence without the aid of concrete, scientific data on which to found his conclusions." In the last analysis the fault is not his but that of the system. He is expected to render an opinion, an interpretation, and he cannot afford to render it on the dangerous side if there is a doubt. And are we doing our full duty in not constantly consulting with him and instructing him when the clinical course or an autopsy confirms, or fails to confirm, his interpretation? It is easy to picture an ideal system, but it is hard to realize for obvious reasons.

At the Children's Memorial Hospital with about 250 beds, and with about 200 autopsies a year, in round numbers nearly 70 per cent of all deaths, we have recently started an extensive study aimed to correlate for us, and we hope ultimately for others, the clinical, roentgenologic and autopsy observations of all chests that come to autopsy. As is our custom at all times, the case is first and constantly studied clinically and the results recorded; roentgenograms are then taken and compared with the clinical record; further pictures are usually taken during life if possible and another immediately after death; all of these are read and recorded by the roentgenologist; the lungs are then fixed in situ, or inflated, removed and again roentgenographed; they are then minutely dissected and examined by a very competent and enthusiastic resident in pathology, Dr. Bigler, who devotes the major part of his time to that work. With the clinical and roentgenologic evidence before him, commonly supported by a previous clinical study of the patient himself, he attempts to determine the exact nature, macroscopically and microscopically, of any shadow and lack of shadow in the film. At the weekly pathologic conference the case is then reviewed clinically, the films and the specimens are compared, and the roentgenologist is informed as to the results. The autopsy is a great leveler, and we are all becoming duly humble, wholesomely conservative, and wisely charitable. We hope at the end of a year with some 150 autopsies so studied behind us to be no longer menckenian philosophers but more nearly true scientists who base their deductions on concrete, demonstrated data. The results even after a couple of months are illuminating. I would like to tell you some of them, but it would not be quite fair to our clinical pathologist to "steal his thunder." I cannot refrain from saying, however, that the "calcified" gland has always been a thorn in my flesh, and that of the many so diagnosed in these cases none have shown any evidence of calcification while, on the other hand, three calcified glands were undiagnosed antemortem and were hard or impossible to find in the film, even in retrospect.

There is one chest condition due to tuberculosis in which the roentgenologist can readily make the diagnosis from his film, and we cannot with certainty clinically, because of the absence of all physical signs, i. e., a miliary tuberculosis or rather an early miliary tuberculous bronchopneumonia, especially in the baby. Even here there is room for caution. I have seen a number of cases that were diagnosed roentgenologically as miliary tuberculosis, usually unilateral, and not without some superficial justification, gradually clear up as a widely disseminated bronchopneumonia would be expected to do in the presence of a negative Pirquet reaction.

Lastly, the mother who brings her child because he has been exposed to tuberculosis deserves our deepest interest and our most active cooperation. We have fortunately long got away from the idea that tuberculosis is rare at the extremes of life. The younger the individual, the younger the child, the younger the baby, the greater the danger of contagion, and the new-born baby should be guarded against tuberculosis as against the seven plagues. If I can avoid it I will never allow a new-born baby to live in the same house with its own mother, or with any one else, that has any suspicion of an open tuberculosis. An open or suspected open tuberculosis is an absolute contraindication to nursing, not because of the danger from the milk but because the baby must be brought into the same room with his mother. Ordinary precautions that will protect the adult or the older child are wholly inadequate with the baby. The tuberculous patient at best is apt to get careless at times, the expression of what the psychologists call a defense mechanism; and it is not humanly possible to trust a mother to keep at a safe distance from her new-born baby. The baby that has been exposed even for a short time to an open tuberculosis, and the older child that has been seriously exposed should be considered tuberculous and, so far as possible, treated as such no matter what the present state of health may be. Except in the case of the new-born baby the prognosis is, however, by no means wholly bad even if the child, or older baby, is definitely infected. I recall a baby of 7 months that nursed her mother, who had an open tuberculosis and was notoriously indifferent, to within a few weeks of the death of the mother; a baby that had a Pirquet reaction as big as a dime and yet is now 17 or 18 years old and said to be in robust health. I would like especially to emphasize the fact that the grandfather, who lives with the family, who has coughed for years with an assumed "old man's cough," is a not infrequent cause of contagion to the grandchildren.

I have discussed at length in a former paper [1] the treatment of the nontuberculous diseases of the chest and will restrict myself to a few generalities. The all-important triad in the medical treatment of all these conditions is the same triad you have so long employed, rest, food and air. In fact, the treatment is practically identical with that for tuberculosis; the order of importance has been shifted from time to time.

Of these three there is no longer any doubt in my mind that rest, rest in bed, complete rest, whenever there is fever and fatigue, is the greatest single general therapeutic agent; and it is just as effective and just as easily carried out in the child as in the adult.

Food comes second. One can commonly disregard the underlying pathologic condition if the child will eat and get fat. Four important points here bear emphasis: first, the child will eat better, just as does the tuberculous patient with fever, if he is at rest in bed; second, he will commonly eat better in a strange environment or for a strange person than he will at home for his mother; third, it is not only useless to coax and wheedle and beg or even force a child to eat—it is the surest way known to get him not to eat; fourth, medicine, per se, is of little or no value. If the child is convalescent, no longer febrile, iron will often help, and cod liver oil if well taken in one form or another is, of course, a most useful and peculiarly valuable food.

Air is third. Climate was long first, and innumerable early graves in the dry, sunny West can bear mute testimony that it should not have been. Fresh air, on the other hand, outdoor air, air not in a room, day air or night air, air in Arizona or air in Illinois, is just as valuable today as it was before we found out that ultraviolet rays from the sun, from a quartz lamp or from a carbon arc lamp will prevent and cure rickets and will act favorably on certain forms of tuberculosis if used judiciously. I am very skeptical about the panaceal value of the ultraviolet rays that now have the spotlight; and I am not at all convinced that they will cause a cavity the size of a walnut in a young child to close up and leave no trace, in a comparatively short time, as was recently reported from a high source. The cavity was, by the way, apparently diagnosed by roentgen ray only. It is hard to get away from the fact that all races much exposed to the sun, all farmers, life guards, beach bathers, develop a pigment, or a tan, that has all the earmarks of a protective mechanism, and that overexposure to ultraviolet rays will destroy the antirachitic properties that can be imparted to otherwise inert substances by shorter exposures.

Of drugs other than cod liver oil, if it may be called such, or iron for anemia and convalescence, or opiates for their sedative action in harassing coughs, it is hardly worth while to speak because placebos are less often needed in children than they seem to be in adults.

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1. Brennemann, Joseph: Medical Treatment of Chronic Nonspecific Infections of Lungs and Bronchi in Children, J. A. M. A. **87**: 801 (Sept. 11) 1926.

INTENSIVE POSTURAL REST IN THE TREATMENT OF PULMONARY TUBERCULOSIS *

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Several years ago Webb [1] and his co-workers called attention to a new method of treating pulmonary tuberculosis; namely, "postural rest." The absence of further reports since that time leads us to believe that this method has not received the recognition it deserves. We offer this brief report in the hope that other workers may learn of its value.

The object of postural rest, according to Webb, is to secure practically complete rest of the diseased lung by having the patient lie on the affected side. He showed that after from thirty minutes to an hour in this position the respiratory excursions of the chest wall are greatly diminished. In some cases there is a definite sagging of the heart and mediastinum due to gravity. Often after several months of postural rest there is a marked shrinkage of the diseased lung caused by fibrosis, with decrease in the size of cavities, sometimes to the point of complete obliteration.

We have used this method of treatment in a large number of cases with some modifications which serve to intensify the rest as well as accomplish some other things that Webb fails to mention. He says that in some cases a thin pillow is placed under the affected side to increase the splinting effect. In our cases we have used a pillow especially built for this purpose. It is in the shape of a small mattress, with side walls, and

* From the Albuquerque Sanatorium.

1. Webb, G. B.; Forster, A. M., and Houck, F. M.: Rest of the Individual Lung by Posture, J. A. M. A. **67**: 1422 (Nov. 11) 1916. Webb, G. B.; Forster, A. M., and Gilbert, G. B.: Postural Rest for Pulmonary Tuberculosis, ibid. **76**: 846 (March 26) 1921.

2 pounds of mule hair provides the proper amount of filling. The thickness is 3 inches, which raises the shoulder sufficiently, so that it bears none of the weight of the torso. When pressure is applied to the shoulder, the force is transmitted along the clavicle to the sternum and does not retard the motion of the chest wall. The width, 10 inches, represents the distance from the upper axilla to the lower margin of the lung in the average individual. The length is 20 inches, which permits the patient to roll forward or backward without diminishing the pressure on the thoracic wall, and gives relief from discomfort by the change in posture. Thus the weight of the upper body with the exception of the head is supported by the chest wall. Roughly, this amounts to a pressure against the thorax equal to half the body weight. The head is supported by ordinary pillows adjusted as the patient's comfort indicates.

Our method is to have the patient begin with one hour of postural rest the first day and increase a half hour daily until he reaches a maximum of from sixteen to twenty hours out of the twenty-four. Some of our patients can increase this dosage more rapidly, while others must progress more slowly. The rate of increase is governed by the comfort of the patient. It is not uncommon for patients to report, after several months' treatment, that they cannot rest well unless they are on the pillow. When not using the pillow, the patient rests on his back but never on the well or less diseased side.

At first nearly all patients notice a temporary increase in cough and expectoration, and there may be a slight increase in temperature. Within a week these symptoms subside, and frequently from this time on there is a steady decrease in the amount of sputum as well as improvement in other symptoms. We often notice a similar increase in temperature and sputum on inducing artificial pneumothorax, and the cause is the same. We have occasionally seen slight spitting of blood when postural rest is begun, but this rarely amounts to more than a little oozing which subsides after a day or so. It is possible that the postural rest causes a passive hyperemia of the treated lung which might produce this oozing.

The lung is expanded by the outward excursions of the chest wall and the downward motion of the diaphragm. The muscles of the thoracic wall are not accustomed to working against a pressure equal to half the body weight and soon become so fatigued that all motion ceases. From this time on, while the patient is on the pillow, the upper two thirds of the chest, where most of the tuberculous involvement is found, is at absolute rest.

Webb only casually mentions the sagging of the heart and mediastinum by gravity toward the side on which the patient is lying. In our opinion this is the most important factor in the success of this treatment. This sagging reduces the normal tension in the pulmonary tissues, sometimes to a considerable degree. Pressure readings in cases of pneumothorax cases will almost always show a difference when the posture of the patient is changed. When the patient lies on the side with the pneumothorax, the pressure is often as much as 8 to 10 cm. (water manometer) more than when the patient lies on the other side. In postural rest there is a corresponding increase in the intrapulmonary tension in the other lung. Now in any chronic inflammation, any change in the tension within the tissues is a stimulus to fibrosis, i. e., healing. (The increased tendency toward healing of tuberculous pulmonary lesions in the higher altitudes is due to the change in intrapulmonary tension which accompanies the increase in the girth of the chest.)[2] In cases presenting bilateral involvement, and these are the most numerous among our patients, improvement in the contralateral less diseased lung, which we often see, is no doubt due to the change in the tension within this lung.

In tuberculous pulmonary cavities the tendency to contraction is usually slight because of the presence of infection, in contrast to the marked tendency of healthy scar to great contraction. The normal intrapulmonary tension is usually enough to offset the low contractile force of the fibrous cavity wall. Any reduction in the intrapulmonary tension greatly reduces the force which normally effectively hinders the contraction and obliteration of cavities. As cavities heal by contraction to the point of obliteration, any means favoring such shrinkage should be utilized to the utmost.

The thickness of the wall of a cavity is of much less importance than the amount of pus that is discharged from it. It is an absurdity to encourage a patient by telling him that the cavity wall is becoming thicker when there is no reduction in the amount of sputum. As mentioned in previous papers,[3] pulmonary consumption spreads through the lung by aspiration of pus containing tubercle bacilli into previously healthy lung tissue. The probability of spread is in direct ratio to the amount of sputum.[4] The thickening of a cavity wall which often occurs in chronic cases has nothing to do with extension of the disease and is no protection whatever. This thickening frequently hinders contraction, whether intensive postural rest or pneumothorax therapy is employed, and is thus a liability instead of an asset to the patient.

Extension, when it takes place, is brought about by aspiration, which in turn is caused by two factors. One is the increase in the normal negative intrathoracic pressure during inspiration. This force is greatest where the motility of the chest wall is greatest, as Tendeloo[5] points out, namely, the lower lateral region. The other force which cannot help having a bearing on the general direction of aspirations is that of gravity. Most extensions occur on the same side and extension into the contralateral lung is much less common, though it does occur. By postural rest the aspiratory force is greatly diminished, if not completely abolished, and with the patient on the side from which most, or all, of the sputum is produced, the effect of gravity in these extensions is obviated. We are convinced that extension into the opposite lung is greatly favored by gravity, and it is our practice to impress on our patients the danger of lying on the well or less diseased side. For this reason, when the patient is not on his pillow we insist that he lie either on his back or on the diseased side without the pillow. We have seen a number of cases in which the advice was given to lie on the well side with later disastrous consequences. Thus postural rest, even if it does not benefit the lesion, tends to keep the disease localized. In other words, if it does no good, at least no harm is done.

In our practice intensive postural rest as described is used as a routine procedure in most of our cases. It is our rule to attack the side presenting the greatest

2. Gekler, W. A.: Tuberculosis, East and West, Memphis M. J. (June) 1926.
3. Gekler, W. A.: Phthisis Pulmonalis and Other Forms of Intrathoracic Tuberculosis, Arch. Int. Med. **20**: 32 (July) 1917. Gekler, W. A.: Tuberculous Cavitation of Lung, J. A. M. A. **82**: 457 (Feb. 9) 1924.
4. Nicol, K.: Pathologisch-anatomische und Klinische Betrachtungen der Lungenphthisis, Beitr. z. Klin. d. Tuberk. **30**, No. 2.
5. Tendeloo: Studien über die Ursachen der Lungenkrankheiten, Wiesbaden, 1901.

involvement in bilateral cases. If necessary, when the maximum benefit is achieved on the one side, the other can be treated later if it has not shown improvement. We have seen cavities in the contralateral lung disappear during treatment, and obliteration of cavities in the treated lung occurs with sufficient frequency to make this method of treatment our first choice and pneumothorax or thoracoplasty second and third, respectively, in attacking cavities. Postural rest does not in our experience encourage the formation of pleuritic adhesions to hinder pneumothorax therapy if this should prove necessary later. As a preparation for thoracoplastic treatment it brings about a stiffening of the lung, fixation of the mediastinum and increased firmness of existing pleuritic adhesions which in our patients have entirely prevented any respiratory difficulties following operation. After thoracoplasty, postural rest, when it can be used, greatly increases the amount of collapse of the chest wall.

In our cases of pneumothorax we have successfully used postural rest on the contralateral side for small cavities in the uncollapsed lung. In other cases, when adhesions hinder effective collapse and tuberculous sputum is still being produced from the partially collapsed lung, postural rest on that side by the sagging of the mediastinum has occasionally made the collapse effective and resulted in the closing of cavities.

In the ordinary rest regimen as used in sanatorium practice, the patient is on the defensive against his disease and simply lives in the hope that by the grace of God spontaneous recovery will take place. The military axiom that the best defensive is a vigorous offensive also holds in fighting tuberculosis. By carrying out intensive postural rest, the patient becomes an active partner in an aggressive measure against his disease. This change of front is of untold psychic value in the treatment of a disease in which psychic disorders [6] are frequent enough to deserve careful attention. The rationale of this method of treatment is simple and logical and is easily grasped by the average patient.

We have found that we cannot use postural rest in patients who are greatly debilitated. In acute, recent, massive infiltrations, we do not use it because we are fearful that it may accelerate their breaking down. Such lesions in our opinion are not suitable for any method of mechanical attack.[7] The rest cannot do harm, but the alteration in intrapulmonary tension may cause a lesion to break down which might partially resorb otherwise. Some of our patients present such psychic instability that they cannot be depended on to cooperate in this or any other form of treatment. In a few patients of neurotic type the cough reflex has been so severe and annoying that the treatment could not be used. In left-sided lesions, especially in patients of visceroptotic habitus, we find it wise to caution the patient not to resume postural rest for an hour after meals to avoid digestive disturbances due to delay in emptying of the stomach. We do not use postural rest immediately following hemorrhages for fear that the decrease in tension may result in passive hyperemia which would encourage further bleeding. We find that patients who have marked cardiac displacement due to adhesions, and with this myocardial degeneration, do not tolerate postural rest well. Acute pleurisy is sometimes relieved and sometimes aggravated by postural rest.

It must not be supposed that difficulties are not encountered. We have mentioned the initial increase in expectoration and fever. These are rarely of more than a few days' duration. In two cases, after prolonged treatment, we have seen cardiac displacement to the right of such extreme degree that it was a causative factor in the death of the patient. To be sure, there was also great myocardial degeneration coexisting. In patients with extremely large cavities, it is impossible for the mediastinum to shift enough to compensate for the tissue defect; and, when the maximum contraction of the cavity with postural rest has been achieved, thoracoplasty must be depended on to complete the obliteration. In a certain percentage of patients, especially those who have had pleurisy with effusion, there is a fixation of the mediastinum of such degree that it does not relax and seems insusceptible of displacement. Such cases do not respond to postural rest and, if anything, the mediastinum becomes more fixed—excellent preparation for either artificial pneumothorax or thoracoplasty. In a very few lower lobe cavities we have had absolutely no success, though had we combined postural rest with phrenicotomy the results might have been different. We have not had an opportunity to try postural rest in nontuberculous abscesses of the lung.

Webb mentions rather frequent disappearance of râles over the side subjected to postural rest. This is directly contrary to our experience. We do notice a marked change in the râles and breath sounds as a rule. The râles are very coarse and creaky. They may even be more numerous than before treatment. They are not much influenced by cough, and occur irregularly in any phase of respiration. The breath sounds become harsh and in many cases distinctly tubular in quality. We have seen cases in which there were no physical signs of a cavity [8] when treatment was begun, though there was indisputable roentgen-ray evidence with persistently positive sputum. After several months of postural rest in such cases the classic physical signs of cavitation were present, but the roentgen ray showed complete obliteration and the sputum was either absent or mucoid in character and constantly negative for tubercle bacilli. We warn our patients of the presence of physical signs which are usually interpreted as indicating cavitation, so that if examined later by other physicians they may not be alarmed by a discouraging report. We have seldom seen such a degree of fibrosis on the ordinary regimen of rest.

In our experience, when good results are obtained with postural rest it is within the first three to six months of treatment. It has long been our rule to have stereoroentgenograms taken in our cases at three month intervals. The measurements of the size of the cavity and the twenty-four hour quantity of sputum are our guides as to results. When these tell us that the progress in a given case is at a standstill and that all the improvement possible with postural rest has been obtained, such other measures as may then be indicated are used.

We do not wish to dispute the claims of the designers and manufacturers of the various chest splints that these devices will stop respiratory motion of the chest wall on the side on which they are used. They cannot do the other and more important things that postural rest will do. The use of a chest splint is apt to give the patient the idea that the strict rest regimen can be dispensed with and, by giving him a false sense of

6. Weigel, B. J.: Neuropsychiatry in Tuberculosis, M. J. & Rec. **121**: 40 (Jan. 7) 1925.
7. Gekler, W. A.: Pneumothorax Therapy in Tuberculosis, Boston M. & S. J. **191**: 930 (Nov. 13) 1924.
8. Weigel, B. J.: Intrapulmonary Cavitation in Tuberculosis, Am. Rev. Tuberc. **10**: 319 (Nov.) 1924.

security, encourage him to commit indiscretions. We have found these splints of value following thoracoplasty, especially in patients who, for any reason, must be ambulatory.

CONCLUSIONS

We believe that in intensive postural rest as we use it we have a method of treatment of pulmonary phthisis that deserves to rank with artificial pneumothorax and thoracoplasty in value and effectiveness. It is applicable in a wider range of cases. Complications are no more frequent and certainly less dangerous than with pneumothorax and thoracoplasty. When results are not obtained, pneumothorax or thoracoplasty may still be used. We see striking benefits, i. e., the maximum amount of healing possible in view of the nature and extent of the lesion, in fully one fourth of our cases, and in another fourth there is considerable improvement. When clinical cures are obtained with postural rest, they are just as enduring as with any other form of treatment.

ESSENTIAL HEMATURIA

A CLINICAL STUDY *

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Hematuria is always an alarming symptom and its cause must be carefully sought by the conscientious physician. If there are repeated short spells of bleeding a malignant lesion somewhere in the urinary tract should be suspected. When the bleeding is associated with dysuria and occurs in the earlier part of life, a tuberculous infection would be a more probable cause; if bleeding is accompanied by severe colic, the presence of calculus is suggested. When hematuria is painless and of long duration, disappearing for weeks at a time, the possibility that it is of the so-called idiopathic or essential type must be considered.

In order to make this diagnosis, cystoscopic examination is necessary, at which, all other causes of bleeding being excluded, a diagnosis of essential hematuria is reached by the process of elimination. Some urologists are of the opinion that such a diagnosis serves as a cloak for ignorance of the exact condition, and believe that hematuria is but the early manifestation of some disease such as nephritis, malignant neoplasm or infection which is not sufficiently advanced to be detected. Schenck [1] goes so far as to say that until some competent observer reports a case in which there is no doubt that the kidney was normal in every part, as demonstrated by serial section, we are justified in believing that idiopathic or essential hematuria does not exist. Braasch [2] recently stated: "I am under the impression that it would be difficult to assign any one cause to the variety of conditions which are grouped under the term 'essential hematuria.'"

If the hematuria is the result of single or multiple diseases not far enough advanced to be diagnosed at the time of examination, it would seem that a review of cases followed for a period of years would reveal such disease or diseases sufficiently advanced so that the etiology in at least a part of them might be ascertained. With this purpose, I have reviewed the cases of essential hematuria seen at the Mayo Clinic up to five years ago.

The earliest of these cases was examined in 1907, and it would seem that in from five to twenty years the most insidious disease would have time to manifest itself. Yet of 155 patients heard from, only six report the development of any definite renal disease. In three cases calculi developed; in two of these nephrectomy was necessary, and in the third the passage of a small stone relieved the symptoms. In the three other cases nephrectomy was performed for unknown reasons, presumably because of persistent bleeding. As mistakes in diagnosis were evidently made in these cases, it would seem that the condition diagnosed essential hematuria is not, as is so often claimed, the early manifestation of an impending serious pathologic process but rather the result of a less serious local disturbance. This is further emphasized by the causes of death when it has occurred in cases of the series of 155. Death was caused by renal tuberculosis in one case, by uremia following splenectomy in one, by pulmonary hemorrhage in one, by pneumonia in three, by septicemia in one, by myocarditis in two, by internal hemorrhage in one, by congestion of the kidney following thyroidectomy in one, by insanity and senility in two, by carcinoma of the vagina in one, by paralysis in one, and by tuberculosis (region not stated) in one, and in five the cause was not stated. These causes are certainly not attributable to any serious renal lesion of from five to twenty years' duration, and the mortality rate is too low to coincide with that of any grave renal disease of long standing.

As 105 patients report that they are in good health, forty-four that they are in fair health and only six that they are in poor health at present, I believe we may dismiss the idea that the hematuria was caused by an early malignant growth or any other serious disease in its incipiency.

Levy,[3] in a similar study of thirty cases, comes to the same conclusion; namely, that essential hematuria is not the early manifestation of impending disease, as in none of his cases did tuberculosis, tumor, calculus or nephritis appear. Many urologists hold, however, that nephritis is the underlying cause of the bleeding.

SUGGESTED CAUSES OF ESSENTIAL HEMATURIA

Nephritis.—Hyman [4] explains essential hematuria on the basis of nephritis as follows:

> Up to within a short time ago it was the exception rather than the rule to excise specimens from the kidney at operation for microscopic study; no gross lesions being found, it was assumed that there were no organic changes. Later on sections of the kidneys or the extirpated organ itself were subjected to careful microscopic examinations with the result that changes in the cortex indicative of a true nephritis were frequently found. Thus, in time, essential hematuria came to be considered a manifestation of a chronic nephritis.

Fowler [5] cites a case of unilateral bleeding caused by chronic diffuse nephritis which was revealed at microscopic examination after nephrectomy; following the operation there was evidence of nephritis in the remaining kidney. He believes that nephritis is respon-

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* From the Section on Urology, Mayo Clinic.
* Read before the Los Angeles County Medical Association, Dec. 1, 1927.

1. Schenck, B. R.: Concerning So-Called Essential Hematuria, with Especial Reference to the Hematuria Accompanying Mild Grades of Nephritis, Surg. Gynec. Obst. **13**: 68-73, 1911.
2. Braasch, W. F.: Essential Hematuria, Tr. Am. A. Gen.-Urin. Surg. **19**: 276-278, 1926.
3. Levy, C. S.: Essential Hematuria: A Clinical Study, Surg. Gynec. Obst. **34**: 22-34 (Jan.) 1922.
4. Hyman, Abraham: Notes on the Differential Diagnoses of Various Types of Renal Hematuria, Am. J. Surg. **34**: 312-315 (Dec.) 1920.
5. Fowler, H. A.: Nephritis and Haematuria, Johns Hopkins Hosp. Rep. **13**: 487-505, 1906.

sible for essential hematuria in many cases, and that it may be either diffuse or circumscribed.

Gaudiani [6] holds that all conditions described as hemorrhagic nephralgia are caused by circumscribed inflammatory processes and are so-called unilateral nephritis. Casper [7] believes that nephritis is always bilateral and diffuse, and that the partial type results from old cured lesions. He reports four cases in his series in which bleeding was due to chronic parenchymatous nephritis and in which the disease appeared in the remaining kidney after nephrectomy.

Hagner [8] believes the bleeding is caused by early arterial changes in the kidney, not distinctly nephritic, and that if a series of cases could be followed to their termination, hematuria would be found to be due to arteriorenal disease.

Spitzer [9] believes that nephritis cannot be held responsible and asks, "Why is there such profuse bleeding in essential hematuria when the pathologic changes are so slight, whereas in advanced nephritis with lesions a hundred times worse there is no hematuria?"

That the disease can hardly be of nephritic origin, as nephritis is usually understood, seems clear in this study. Urinalysis, after departure from the Mayo Clinic, had been negative in forty-six cases; in eleven, blood, pus or albumin or combinations of these abnormal constituents had been noted, and in two cases there was sugar. The patients, in reporting their conditions, mentioned many symptoms such as nervousness, constipation, backache, rheumatism and dyspepsia, but never edema and nocturia, and headache only in one case. In fact, there was nothing that indicated the later development of serious nephritis. The phenolsulphonphthalein test was made in 153 cases; it was never below 30 per cent, and averaged 51.65 per cent. The urea content of the blood was determined in thirty-three cases and averaged 32.7 mg. for each hundred cubic centimeters. These data are hardly compatible with the existence of nephritis severe enough to produce bleeding. In 199 cases blood pressure readings at the time of the original examination averaged 129.22 systolic and 79.52 diastolic. In twenty-three cases in which subsequent examination was made, the systolic and diastolic pressures had increased more than 10 mm. in only ten cases and had decreased in nine.

That nephritis in various degrees of severity may be associated with essential hematuria is evidenced by the frequency with which it is found when microscopic examination of the kidney is made. In this series, nephrectomy was performed in fourteen cases; in half of them nephritis was demonstrated; in three it was the only demonstrable lesion. It is to be expected that associated nephritis will frequently be present, and I believe that some observers have erroneously attributed the hematuria to this cause.

Chronic Passive Congestion.—Spitzer and others believe that the prime cause of essential hematuria is passive congestion due to twisting of the renal pedicle, and cite cases cured by nephropexy. The number of cases reported cured by decapsulation would favor this theory, which also explains the intermittent character of hematuria, the kidney having assumed a new position in times of remission.

Rathbun [10] holds that the bleeding is due to chronic passive congestion resulting from scar formation from pyelonephritis, cortical abscesses which have healed, or infarcts produced by remote foci of infection. The contraction of the cicatricial tissue impedes the circulation through the smaller vessels and causes varicosity and rupture, or the vessels rupture as a result of degenerative changes due to the impaired circulation. Rathbun carefully studied sections of three kidneys removed at operation which showed such scarring. If scarring is the cause of essential hematuria, it would serve to explain the successful results obtained either by decapsulation or by pelvic lavage with silver nitrate, depending on whether the ruptured vessels were in the parenchyma or adjacent to the renal pelvis.

In this series, decapsulation was performed in six cases. In one case death followed subsequent splenectomy; in the other five bleeding recurred; therefore, at the Mayo Clinic, this method of treatment may be considered a failure and the results certainly do not indicate that the disease is due to chronic passive congestion, since its symptoms are supposed to be relieved by decapsulation.

Seventeen cases of essential hematuria were treated by nephrotomy. This method, formerly popular because of the fair percentage of cures resulting, had the advantage of revealing any intrapelvic lesion which, if it consisted of localized hemorrhagic areas, could be treated by cautery. However, it had the distinct disadvantage of often being followed by postoperative hemorrhage necessitating nephrectomy; this occurred twice in the present series and has also been reported by MacGowan.[11] As the cauterization of the bleeding points can be accomplished as satisfactorily by cystoscopic methods, the operation is seldom deemed necessary today. It is interesting to note that following this operation hematuria recurred in seven cases, twelve, ten, seven, four and three years, and six months and one month later. In no case in which nephrotomy or decapsulation was performed was there evidence of a twisted pedicle or other obstruction to the venous outflow. In fourteen cases, nephrectomy was performed. Anomalous renal vessels were noted in two of these cases as well as in two in which nephrotomy was performed; however, anomalous vessels are found in so many cases in which bleeding does not occur that they can hardly be considered of etiologic importance. In three of the fourteen cases requiring nephrectomy bleeding recurred in the remaining kidney, an unfortunate complication that Young [12] reports in two of four cases in which nephrectomy was done for hematuria at the Massachusetts General Hospital; Patch [13] of Montreal has reported a case of the same kind.

I consider nephrectomy as a last resort when all other methods of treatment have failed. MacGowan, who is of the opposite opinion, says: "The prognosis in these cases is always serious. While considerable intervals between hemorrhages often occur, more frequently hemorrhages continue until they have exhausted the patient or until the offending kidney is removed." He believes that medical treatment is usually futile. Levy,

6. Gaudiani, V.: Sulla etiologia delle nefriti unilaterali, Folia urolog. **3**: 570-582, 1909.
7. Casper: Ueber ungewöhnliche Nieren- und Nierenbeckenblutungen, Arch. f. klin. Chir. **80**: 350-393, 1906.
8. Hagner, F. R.: Essential Hematuria, Tr. Am. A. Gen.-Urin. Surg. **19**: 278, 1926.
9. Spitzer, W. M.: Continuous Painless Renal Hemorrhage and Its Treatment, J. A. M. A. **63**: 2110-2112 (Dec. 12) 1914.
10. Rathbun, N. P.: Essential Hematuria, Tr. Am. A. Gen.-Urin. Surg. **19**: 253-273, 1926.
11. MacGowan, Granville: Angioma of Papillae of the Kidney, Ann. Surg. **51**: 541-545, 1910; Grave Renal Hematurias Due to Blood Vessel Changes in the Papillae with the Report of an Unusual Case Requiring Nephrectomy, J. Urol. **9**: 331-343 (April) 1923.
12. Young, E. L., Jr.: Renal Hematuria as a Symptom of a Prenephritic Condition of the Kidneys, Surg. Gynec. Obst. **31**: 478-486 (Nov.) 1920.
13. Patch, Frank: Essential Hematuria, Tr. Am. A. Gen.-Urin. Surg. **19**: 275-276, 1926.

in reporting thirty cases, states that in only one was nephrectomy necessary to control the bleeding.

In the present series 218 cases were treated medically or no treatment was instituted after cystoscopic examination had established the diagnosis. In eighty-eight (65.41 per cent) of the 156 cases that have been followed there has never been a recurrence of the bleeding, and in forty it has recurred only once. These results seem better than those of surgical treatment, as hematuria recurred in fifteen of the thirty-seven cases in which operation was performed.

Papillitis.—Many observers, especially those who have examined fresh specimens at the time of nephrectomy or nephrotomy, believe that so-called papillitis or angioma of the papillae explains the greater number of cases of essential hematuria. Congestion of the papillae was observed in four cases in which operation was performed for essential hematuria at the Mayo Clinic. Payne and MacNider [14] state that the hematuria is due to overdistention of the venous plexus of the renal papillae caused by infection with exudation and pressure on the veins at the base of the pyramids. Cabot [15] reports a case in which the papillae were reddened and a little spongy. On microscopic examination the small venules at the tip of each papilla were irregular and dilated, and their free surfaces were covered with a film of connective tissue and a single layer of epithelial cells. Payne [16] reports similar observations; there were dilated capillaries in a network on the surface of all the papillae, many were ruptured, and free blood was escaping. Quinby,[17] in reporting two cases in which nephrectomy was performed, says:

> The source of hemorrhage in each case is obviously from the pelvis and from the tips of the pyramids. In each instance hemorrhages are present within the peripelvic tissues, often occurring just beneath the epithelium, where for a considerable distance the epithelium has been elevated by a layer of extravasated blood.

In one case there was no evidence of inflammatory reaction in the tissues of the pelvis or about the blood vessels; in the other, in addition to hemorrhages beneath the epithelium of the pelvis, there was a distinct inflammatory reaction and there were evidences of vascular injury. At the margin of some of the hemorrhagic areas focal accumulations of polymorphonuclear leukocytes, fibrin, serous exudate, and proliferation of fibroblasts were seen.

MacGowan reports cases in which the pathologic change was confined entirely to the papillae which were reddened and engorged. He advocates removal of the papillae by a wedge-shaped incision.

Randall,[18] in discussing essential hematuria, suggests that the congestion so frequently found at the papillae, termed angioma of the papillae or hemorrhagic papillitis, may be due to a spasm of a circular muscle at the base of the papilla producing engorgement and varicosity of the veins beyond. The anatomists attribute to this muscle the function of actually milking the papilla, so that the urine is brought down by suction rather than by dripping out as was formerly supposed.

The frequency with which essential hematuria is cured after the intrapelvic injection of either some pyelographic fluid or silver nitrate tends to confirm MacGowan's belief that papillitis is usually the cause of the bleeding. In thirty-two cases in the present series, permanent cessation of bleeding followed pyelography.

Infection.—Many investigators have contended that the bleeding is the result of infection either in the papillae or elsewhere in the kidney. Kretschmer,[19] in a review, quotes several authors who believe that infection is responsible for the bleeding, among them Maiocchi,[20] who says that "in practically all cases inflammatory or degenerative changes are to be found," and Gaudiani, who writes that "all cases described as hemorrhagic nephralgia are due to circumscribed inflammatory processes." Billings [21] reports two cases cured by colon bacillus vaccine, and White [22] suggests that the trouble may be due to the passage of bacteria through the blood to the urine.

Because cultures of urine from the bleeding kidney are invariably sterile, little credence has been given to these theories. Some years ago, while studying the relation of focal infection to pyelonephritis, Meisser and I injected a considerable number of rabbits with cultures obtained from the foci of patients with essential hematuria. We never reproduced the disease, but we may have failed because we did not produce a chronic focus in the animals.

In the operative cases in this series, except when the inflammation was confined to the papillae, only one case of pyelitis was noted. There is, however, suggestive clinical evidence that focal infection plays a part in essential hematuria. From 1918 to 1922, inclusive, tonsillar sepsis was noted in sixty-five and periapical infection in sixty-one of the 129 cases examined. There were also cases resistant to all forms of treatment until foci of infection were removed, when the bleeding ceased. Possibly this was coincidental, but a striking piece of clinical evidence was presented by a case in which hematuria persisted for two years but disappeared on the removal of a devitalized but apparently uninfected tooth which the patient had been unwilling to have extracted.

Hemophilia.—Blood dyscrasia has been considered a possible factor in essential hematuria. Senator [23] reported a case in which the kidney removed at operation was normal both macroscopically and microscopically. He considered the disease to be renal hemophilia. Barringer,[24] following the original suggestion of Welch (Bienwald [25]), who used normal human blood serum in treating hemophilia neonatorum, suggests its use in essential hematuria and reports a case in which the bleeding ceased after the intramuscular injection of a relative's serum. The patient's own blood has been injected intramuscularly in connection with other forms of treatment in many cases at the Mayo Clinic with gratifying results. The possibility that essential hematuria might have some relationship to purpura hemor-

14. Payne, R. L., Jr., and MacNider, W. B.: The Surgical Problem of Unilateral Symptomless Hematuria, J. A. M. A. **67**: 918-922 (Sept. 23) 1916.
15. Cabot, Hugh: Varix of a Papilla of the Kidney a Cause of Persistent Hematuria, Am. J. M. Sc. **137**: 98-102, 1909.
16. Payne, R. L., Jr.: Unilateral Hematuria Associated with Fibrosis and Multiple Microscopic Calculi of the Renal Papillae, Surg. Gynec. Obst. **23**: 76-79 (July) 1916.
17. Quinby, W. C.: The Pathology of the Renal Pelvis in Two Cases Showing Hematuria of the So-Called Essential Type, J. Urol. **4**: 209-218 (June) 1920.
18. Randall, Alexander: Essential Hematuria, Tr. Am. A. Gen.-Urin. Surg. **19**: 280-281, 1926.
19. Kretschmer, H. L.: Unilateral Kidney Hemorrhage with Reference to So-Called Essential Hematuria, Surg. Gynec. Obst. **16**: 34-42, 1913.
20. Maiocchi, A.: Ematuria renali, Ztschr. f. Urol. **4**: 543-544, 1910.
21. Billings, Frank: Vaccine Therapy in Colon Bacillus Infection of the Urinary Tract, Am. J. M. Sc. **139**: 625-631, 1910.
22. White, Hale: Essential Renal Hematuria, Quart. J. Med. **4**: 509-520, 1911.
23. Senator, H.: Ueber essentielle Nierenblutungen und renale Hämophilie, Berl. klin. Wchnschr. **1**: 205-207, 1910.
24. Barringer, B. S.: Unilateral Kidney Hemorrhage Controlled by Injection of Human Blood Serum, J. A. M. A. **59**: 1538-1539 (Oct. 26) 1912.
25. Bienwald, P.: Ein Fall von Hämophilie, Deutsche med. Wchnschr. **23**: 28, 1897.

rhagica led Conner and me[26] recently to study thirty-three cases of essential hematuria, with particular attention to blood platelets, coagulation time, bleeding time, prothrombin time and the history of bleeding in other areas. There was little evidence that essential hematuria is localized purpura hemorrhagica, except the low platelet counts, which averaged 136,000 for the group, about half the normal. This observation suggests that the deficiency in platelets may have a bearing in some cases, especially in those benefited by the intramuscular injection of serum.

COMMENT

It would seem from this clinical study that essential hematuria is not the early manifestation of an impending disease but is caused by a minor local lesion, as described by Braasch in 1913,[27] which usually responds readily to cystoscopic treatment, although surgical intervention is occasionally necessary.

The similarity of the disease to nose bleed in respect to seriousness, severity, recurrence and pathologic changes would seem to make the name renal epistaxis, given by its original describer, Sir William Withey Gull, more appropriate than essential hematuria, which does not signify anything concerning the location or etiology of the disease.

A SIMPLIFIED TECHNIC FOR ABDOMINAL PANHYSTERECTOMY

PRELIMINARY REPORT *

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For several years past I have been gradually perfecting a new operation for complete removal of the uterus by the abdominal route which possesses distinct advantages over the older procedures. The perfected operation has been repeatedly demonstrated to members of the resident staffs of the Johns Hopkins Hospital, the Hospital for the Women of Maryland and the Union Memorial Hospital, all Baltimore institutions. It has also been performed twice before visiting surgical societies at the Johns Hopkins Hospital.

Pending completion of a survey of the literature and preparation of the artist's illustrations, the following preliminary outline of the operative steps is offered:

TECHNIC OF THE OPERATION

1. Preliminary surgical toilet of the vulva, vagina, cervix and abdominal walls is first instituted.

2. A lower midline abdominal incision is then made from the symphysis to the umbilicus.

3. Adequate exposure and isolation of the pelvis through the Trendelenburg posture is secured, together with the proper disposition of wet gauze packs.

4. The fundus of the uterus is grasped with an appropriate instrument and lifted well up.

5. A transverse incision is made through the vesico-uterine peritoneum at the upper margin of its loose attachment to the uterus, and is carried laterally on each side to the uterine attachment of the round ligament.

6. Into the angle of this incision on each side the index finger is introduced and burrowed bluntly through the loose areolar tissue of the broad ligament, perforating its posterior layer close to the uterus below the level of attachment of the round ligament, the fallopian tube and the utero-ovarian ligament.

7. This aperture is bluntly enlarged sufficiently to permit the approximation of these three structures to form a single pedicle, to which two clamps are applied and the appendages divided between them close to the uterus.

8. Transfixing ligatures replace the two clamps on the severed appendage stumps, while the two applied to the lateral angles of the uterus are henceforth used as tractors, the original instrument applied for uterine elevation now being removed.

9. Traction upward on the uterus now brings clearly into view the skeletonized uterine vessels, which are clamped and divided on each side at or above the level of the internal os. Ligatures now replace the clamps on these vessels, care being exercised not to include any cervical tissue in passing the needle.

10. The severed uterine vessels are bluntly dissected away from the cervix down to the thick basal segment of the broad ligaments.

11. The uterus is lifted strongly upward, and the bladder is now separated by blunt dissection from the cervix and vagina well down below the level of the external os.

12. The uterus is now drawn strongly upward and forward, and a transverse incision is made through its posterior peritoneum 1 cm. above the level of the attachment of the two uterosacral ligaments; the lower peritoneal flap resulting is dissected free from the cervix sufficiently to permit introduction of the left index finger. With the application of blunt dissection to the posterior surface of the cervix, the peritoneum is now fully freed from the cervix and lower down the rectum from the vagina below the level of the external os. Bleeding does not occur in this step, if the dissection is not carried laterally on each side into the broad ligament zone.

13. When the uterus is well lifted up, the two index fingers may be readily apposed below the vaginal portion of the cervix through the anterior and posterior vaginal walls, respectively.

14. The two uterosacral ligaments are now clamped, divided and ligated.

15. The dense basal segment of the broad ligament, together with the adjacent vascular plexus, may now be easily grasped close to the cervix with a single clamp, divided and securely ligated, the clamps being removed. If the cervix is elongated, this step may have to be repeated at a lower level.

16. The vaginal vault now is drawn up into plain view on all sides. It is incised anteriorly, and promptly balloons. The incision is carried round the cervix, four artery clamps being applied to the vaginal vault: one anteriorly in the midline, one laterally to each angle and one posteriorly in the midline, as the uterus is lifted out, without the cervix at any time having come in contact with any intrapelvic tissue, and without any annoying bleeding.

17. Special angle sutures now replace the two angle clamps, as follows: The needle is first passed through the anterior vaginal wall and into the lumen of the vagina 1 cm. mesial to the angle; it now twice transfixes the stump of the basal portion of the detached broad ligament, forming within it a liberal mattress suture loop; from here it again enters the lumen of the vagina, passing through its posterior wall close to the angle and also transfixes the stump of the uterosacral ligament. When tied, this suture closes the lateral vaginal angle and snugly apposes to it for support both the strong basal portion of the broad ligament and the uterosacral ligament.

18. Further complete or partial apposition of the anterior to the posterior vaginal wall by suture, depending on whether or not drainage is to be employed, is now quickly executed.

19. A single mattress suture on each side now first engages the closed vaginal vault anteriorly and mesially to the angle suture, transfixes the stumps of the round and utero-ovarian ligaments, and passes back to engage the posterior vaginal wall opposite the point of entrance. When tied, this suture snugly apposes the round and utero-ovarian ligaments to the vaginal vault.

20. The vesico-uterine peritoneum is now neatly sewed to the posterior peritoneal flap, leaving the pelvis completely peritonealized with the vaginal vault and the ovaries strongly supported.

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26. Conner, H. M., and Bumpus, H. C., Jr.: Essential Hematuria and Its Possible Relationship to Purpura Hemorrhagica, Am. J. M. Sc. **173**: 176-184 (Feb.) 1927.

27. Braasch, W. F.: Clinical Observations on Essential Hematuria, J. A. M. A. **61**: 936-939 (Sept. 20) 1913.

* From the gynecologic department of the Johns Hopkins University and Hospital.

Adequate illustrations of this operation, together with a discussion of its advantages over procedures hitherto employed for complete extirpation of the uterus by the abdominal route, will appear in a later communication.

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PNEUMOCOCCUS MENINGITIS

RECOVERY WITH SERUM THERAPY

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Contrary to the accepted belief, pneumococcus meningitis is not uniformly fatal. The contradictory statements on this subject are apparently due to the individual experiences of various writers. For example, Kolmer [1] reports a mortality of 100 per cent in fourteen cases, arising from the ear, from the accessory sinuses or from no determinable focus. Schottmüller [2] reports 100 per cent mortality in 100 cases. Jochman [2] records a similar experience. Lubarsch, on the other hand, considers that 1 per cent of the patients recover, whereas E. Frankel places the percentage of recovery at 2. Isolated instances of recovery are contained in the French literature of the past decade. Devic and Dechaume [3] quote a case of Cruveilhier in which recovery followed the injection of 200 cc. of antipneumococcus serum. Hallé [4] also records a case with favorable outcome following the use of antipneumococcus serum and the establishment of fixation abscess by means of oil of turpentine. No culture of pneumococcus was obtained from the spinal fluid, but two or three diplococci were seen in the smears. Numerous gram-positive encapsulated diplococci were isolated from the patient's sputum but were not agglutinated by specific serums. Hallé ascribed the recovery either to infection with a special type of avirulent pneumococcus, as inoculations of mice with the spinal fluid did not prove fatal, or to the small number of invading bacteria.

Netter and Césari [5] reviewed two series of cases. In the first they found records of three recoveries in forty-two cases, and in the second, six recoveries in sixty cases. These authors record a case of infection with pneumococcus type 2 treated by antipneumococcus serum plus fixation abscess, the latter being employed because of uncertainty, as Netter states, of the efficacy of pneumococcus serum. Other instances of recovery reported by Parkinson,[6] Culper,[7] Cuming,[8] Rosenow [9] and Campbell [10] are more extensively quoted by Globus and Kasanin.[11] Ratnoff and Litvak [12] report a case of pneumococcus meningitis in which direct smears and cultures from the spinal fluid yielded gram-positive encapsulated diplococci "interpreted as type 3." The patient did not respond to the treatment with the antipneumococcus serum but recovered after the use of ethylhydrocupreine (optochin) hydrochloride. These authors discuss the experiences of Morgenroth and Levy,[13] Moore and Cohen,[14] Kolmer and Heist [15] and Kolmer and Idozumi [16] with the use of this drug in the treatment of pneumococcus meningitis. According to Kolmer and Idozumi, ethylhydrocupreine is most effective when used early in the disease by the intraspinal route. Ratnoff and Litvak also quote Bohneke [17] to the effect that small doses of ethylhydrocupreine markedly increase the efficacy of antipneumococcus serum. This fact has recently been reestablished by Stewart [18] in the treatment of experimental pneumococcus meningitis in dogs.

In contrast to the authors mentioned, there are others who report recoveries of patients with pneumococcus meningitis without the use of serum or of drug therapy. In these cases drainage by repeated lumbar puncture or by cisternal puncture as employed by Globus and Kasanin,[11] or by laminectomy as advised by Leighton and Pringle [19] and others, has been the sole method of attack. Although these methods of drainage seem to be effective aids in some cases, the fundamental problem is to influence the disease by means of specific serum therapy, when the diagnosis has been established after careful cultural investigation.

Study of the literature leaves one at times confused as to the exact type of organisms dealt with by some authors. On the finding of encapsulated diplococci in smears from the spinal fluid and the isolation of pneumococci from the sputum, they base the unwarranted conclusion of the identity of the two organisms.

Instances of recovery are also recorded after one or two lumbar punctures without any other form of treatment whatever—presumably cases of transient invasion of the meninges by organisms of very low virulence in a highly immunized individual in whom drainage has assisted in rapid dispersion of the bacteria. On the other hand, cases are cited wherein repeated lumbar punctures are without avail. This in all probability is due to the occurrence of encapsulated bacterial foci in one or more areas of the subarachnoid space which act as sources of reinfection, with ultimate breaking down of the systemic resistance by successive invasions of the host.

Bearing in mind the possibility of varied localization and multiplication of bacteria in the different regions of the brain in the course of the disease, the important objective, so ably demonstrated by Stewart in his experiments on meningitis in dogs, is to bring all the regions of the meninges into frequent contact with the therapeutic agent employed. This he accomplishes by a method of a quadruple puncture, in which he employs ethylhydrocupreine-serum mixtures. In his opinion absence of such contact causes incomplete sterilization, and "reinfection" is almost inevitable. His protocols also show the necessity of securing repeated cisternal fluids, negative both on smear and on culture, before

1. Kolmer, J. A.: Therap. Gaz. **44**: 697 (Oct.) 1920.
2. Quoted by Steinbrink, O.: Beitrag zur Heilbarkeit der Pneumokokken Meningitis, Therap. d. Gegenw. **71**: 188-190, 1925.
3. Devic, A., and Dechaume, J.: Lyon méd. **131**: 647, 1922.
4. Hallé, J.: Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 757 (May 25) 1923.
5. Netter, A., and Césari, E.: Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 763 (May 25) 1923.
6. Parkinson, P. J.: A Case of Postbasal Meningitis Due to Pneumococcus Lanceolatus; Recovery, Brit. J. Child. Dis. **1**: 112, 1904.
7. Culper, R. C.: Primary Cryptogenic Pneumococcus Cerebrospinal Meningitis, with a Report of Three Cases, M. Rec. **68**: 815, 1905.
8. Cuming, J. H.: A Case of Pneumococcus Cerebrospinal Meningitis, Lancet **2**: 294, 1912.
9. Rosenow, George: Heilung der Pneumokokken Meningitis durch Optochin, Deutsche med. Wchnschr. **46**: 9 (Jan. 1) 1920.
10. Campbell, James: Pneumococcus Meningitis, Lancet **1**: 54, 1925.
11. Globus, J. H., and Kasanin, J. I.: Pneumococcus (Type IV) Meningitis, this issue, p. 599.
12. Ratnoff, H. L., and Litvak, A. M.: Pneumococcus Meningitis Treated with Morgenroth's Optochin Hydrochloride, Arch. Pediat. **43**: 466 (July) 1926.
13. Morgenroth, J., and Levy, R.: Berl. klin. Wchnschr. **48**: 1560, 1911.
14. Moore and Cohen: J. Exper. Med. **22**: 269, 1915.
15. Kolmer, J. A., and Heist, G. D.: J. Infect. Dis. **20**: 313 (March) 1917.
16. Kolmer, J. A., and Idozumi, G.: J. Infect. Dis. **26**: 355-372 (April) 1920.
17. Bohneke: München. med. Wchnschr. **60**, 1912.
18. Stewart, F. W.: Local Specific Therapy of Experimental Pneumococcal Meningitis in Dogs, J. Exper. Med. **46**: 391 (Sept.) 1927.
19. Leighton, W. E., and Pringle, J. A.: Recovery in Two Cases of Streptococcus Meningitis Following Lumbar Laminectomy and Drainage, J. A. M. A. **64**: 2054 (June 19) 1915.

complete sterilization can be assured. The clinical application of some of these experimental facts, as will be seen, have been demonstrated in a case of pneumococcus type 1 meningitis that came under our observation:

REPORT OF CASE

History.—A married woman, aged 57, with an essentially negative past history, except for some pelvic operation two years before, developed an upper respiratory infection, May 30, 1927. Two days later she complained of pain in the right ear, which, after twelve hours, was followed by perforation of the right ear-drum and the discharge of a small amount of pinkish fluid. No real pus was observed. The ear was irrigated for several days.

Two days after the perforation of the ear-drum, the upper respiratory infection increased in severity. About the same time, periods of delirium developed. There was mild headache. There was no vomiting. No convulsions or muscular twitching were observed. The temperature on this day rose to 105 F. The patient was seen, June 3, 1927, at which time her chief complaints were headache, dizziness and progressive drowsiness.

Physical Examination.—The pupils were rather small, were contracted, and reacted sluggishly to light. The fundi showed moderate congestion. The tongue was coated, the pharynx was congested, and a plug of mucopus covered the pharyngeal vault. The neck was slightly rigid. The Kernig and Babinski signs were present on both sides. The knee jerks were definitely diminished. Abdominal reflexes were present. Examination of the lungs showed crepitating râles at the right base, but no bronchial breathing and no dulness. On account of the shallow respiration, these signs were interpreted as due to partial atelectasis. Examination of the ear-drums by Dr. Friesner disclosed hemorrhagic blebs on the left ear-drum, with a thin serous discharge. He did not consider the meningitis secondary to the infection in the ear, but believed both to be the result of the upper respiratory infection.

Course of the Disease.—June 5, 40 cc. of cerebrospinal fluid was withdrawn by lumbar puncture. The spinal fluid contained numerous polymorphonuclear cells. Spreads showed gram-positive diplococci, two or three to a field. Cultures yielded a pure strain of bile-soluble, gram-positive diplococci. This organism was agglutinated by specific serums and found to belong to pneumococcus type 1. Eight hours later another lumbar puncture was performed. At the same time 35 cc. of Felton's type 1 antipneumococcus serum was introduced intraspinally and 15 cc. intravenously.

June 6, 40 cc. of cerebrospinal fluid was removed by lumbar puncture; 30 cc. of serum was injected intraspinally and 10 cc. intravenously. Gram-positive diplococci, which failed to grow on transplants, were again isolated from this spinal fluid.

June 7, lumbar puncture yielded only 4 cc. of cerebrospinal fluid. This small quantity was ascribed to the development of meningeal adhesions. For this reason no serum was injected intraspinally, but 10 cc. was given intravenously.

June 8, the temperature fell to 101.2. No puncture was attempted.

June 9, the temperature rose to 104.2. Lumbar puncture resulted in a dry tap. A cisternal puncture was therefore performed by Dr. Globus; 60 cc. of turbid fluid was withdrawn and 15 cc. of serum injected intracisternally. On cultures the aspirated fluid yielded pneumococcus type 1. The fluid contained 4,000 cells per cubic centimeter. Blood count revealed: total leukocytes, 10,900; polymorphonuclears, 76 per cent; lymphocytes, 22 per cent; mononuclears, 2 per cent.

June 10, at 11:30 a. m., 40 cc. of turbid fluid was removed by cisternal puncture. The cell count was 3,700 per cubic centimeter. No organisms appeared on culture. At 8:45 p. m., cisternal puncture was again done, 45 cc. of turbid fluid being withdrawn, and 15 cc. of serum being injected intracisternally and 20 cc. of serum intravenously at the same time. Cultures were again negative.

June 11, lumbar puncture was successfully performed and 50 cc. of fluid withdrawn. This contained 3,000 cells per cubic centimeter with 95 per cent polymorphonuclear leukocytes; 20 cc. of serum was injected intravenously. Cultures from the cerebrospinal fluid were sterile.

June 12, 35 cc. of fluid was withdrawn by lumbar puncture; 20 cc. of serum was introduced intravenously. Culture of the fluid was sterile. The cell count of the cerebrospinal fluid was 1,840 cells per cubic centimeter, of which 95 per cent were polymorphonuclear leukocytes. At 6:30 p. m., 20 cc. of fluid was withdrawn by lumbar puncture.

June 13, 40 cc. of fluid was withdrawn. Culture was negative. The cell count of the cerebrospinal fluid showed 1,000 cells per cubic centimeter. The proportion of polymorphonuclear leukocytes was unchanged.

June 14, 55 cc. of slightly turbid fluid was withdrawn. The culture was sterile. A total cell count was not done because of the presence of red blood cells. The polymorphonuclear cells had fallen to 56 per cent, the remaining cells being lymphocytes. The patient complained of pain in the right thigh. This was found to be due to herpes zoster over the right buttock. There was also present a blotchy erythematous rash over the right forearm and a diffuse papular rash over the abdomen and the breasts. The eruption was interpreted as being due to serum sickness.

June 15, at 10 a. m., the papular erythematous rash spread over the entire body, with the exception of the face; 35 cc. of culturally sterile spinal fluid was withdrawn.

June 18, lumbar puncture yielded 35 cc. of almost clear fluid. The cell count showed 30 cells per cubic centimeter.

June 19, the patient complained of pain on micturition. The urine showed numerous pus cells and erythrocytes. Cystitis, apparently the result of catheterization, which had to be employed in the early stages of her illness, had developed.

June 20, the serum rash had disappeared.

The temperature fell to normal and the patient was discharged from the hospital, July 3, perfectly well, all physical signs having disappeared. At no time were evidences of frank pulmonary involvement demonstrable.

SUMMARY

During the course of illness the following features of note presented themselves:

1. Sterilization of the cerebrospinal fluid after the first injection of Felton's serum.
2. Development of a temporary block in the lumbar region probably due to adhesions, resulting in a dry tap.
3. Reinfection characterized by a rise in temperature and by the recovery of pneumococcus type 1 from the cisternal fluid.
4. Introduction of serum intracisternally with prompt sterilization of the cerebrospinal fluid. Cultures from the subsequent specimens of fluid obtained by daily lumbar puncture did not yield organisms.
5. Occurrence of serum sickness on the fourteenth day of the illness.
6. Negative results of two blood cultures taken during the course of the illness.

CONCLUSIONS

In a case of pneumococcus type 1 meningitis, definitely diagnosed as such on the third day of the disease, Felton's [20] serum was employed with a favorable outcome. From a survey of the literature it is difficult to state definitely that any one method of treatment is the method *par excellence*, nor does the experience acquired in one case justify any broad generalization. Yet our own clinical observations and those of others would lead one to the following conclusions:

1. The early diagnosis and the identification of the invading organisms is of supreme importance.

20. The serum used in this case of meningitis, which was kindly supplied by Dr. Jesse G. M. Bullowa of the Harlem Hospital, was prepared in 1927 and was relatively free from lipoids and other chill-producing factors. It was processed at icebox temperature, and was refined by Dr. Felton at Harvard University on serum developed by Dr. William H. Park at Otisville from horses provided by the Littauer Pneumonia Fund of New York University.

2. Specific serum therapy employed should be definitely potent and should be promptly instituted.

3. The serum should reach all foci of infection in the subarachnoid space. Where adhesions are suspected it should be administered intracisternally as well as intraspinally.

4. Drainage of the cerebrospinal fluid by both routes is an essential aid.

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PNEUMOCOCCUS (TYPE IV) MENINGITIS

REPORT OF A CASE TREATED BY FORCED SUBARACHNOID DRAINAGE, WITH RECOVERY *

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Instances of recovery from pneumococcus meningitis are admittedly exceedingly few. Kolmer [1] goes so far as to say that the mortality of acute diffuse purulent pneumococcus meningitis and streptococcus of otitic or nasal origin is more likely to be 100 per cent, when treatment consists of the usual methods of spinal puncture and intraspinal injections of antistreptococcus and antipneumococcus serum. He is frankly skeptical of the few reported recoveries in cases of pneumococcus meningitis, for in his own experience he was unable to accomplish much more than prolonging life. And then again, in two patients who recovered from so-called pneumococcus meningitis who came under his observation, a bacteriologic study disclosed the meningococcus organism as the causative agent. Thus he concludes that many of the reported cures in pneumococcus meningitis were instances of mistaken diagnosis.

But a careful survey of the literature yields a small series of cases in which reliable bacteriologic examinations have revealed the pneumococcus as the causative organism. These instances, though few, establish the fact that recoveries in pneumococcus meningitis are possible, some of them taking place spontaneously while others occur in response to one or another therapeutic measure.

Parkinson [2] reports a case of pneumococcus meningitis that developed in the course of a pneumonia. The cerebrospinal fluid revealed *Diplococcus lanceolatus*, with the characteristic capsule on smear and in culture. Meningeal signs were present for five weeks, but as the pneumonia began to resolve, the meningeal manifestation began to recede, and ultimately spontaneous recovery resulted. Such a recovery without any therapeutic intervention is one of a few similar instances in which the meningeal involvement occurred in the course of pneumonia. It is quite probable that a partial immunization was produced by the coexisting pulmonary infection, which served as a determining factor in the spontaneous recoveries. This is well shown by Stewart [3] in his studies on the experimental production of pneumococcus meningitis.

Cupler [4] describes three cases of pneumococcus meningitis, of unknown origin, in which the organism was definitely identified. While he does not describe the methods he employed for the bacteriologic study, there is no reason to discredit his statement that the pneumococcus was the causative agent. In one of the group there was full recovery, and subarachnoid drainage (though only four lumbar punctures were done) was regarded as being responsible for the cure.

In Cumming's [5] case the pneumococcus was found on smear and in cultures. This diagnosis will very likely not be accepted without challenge, since the first culture was contaminated by staphylococci, though subsequent attempts yielded pure cultures of pneumococcus. The patient was given ten intraspinal injections of antipneumococcus serum. Gradual and complete recovery followed.

Brown [6] regarded his case at first as an instance of meningococcus meningitis and treated it as such, but as soon as the bacteriologic study was completed and the pneumococcus was identified, the patient was given five injections of pneumococcus vaccine with good results.

Rosenow's [7] case is an instance of pneumococcus meningitis proved by careful bacteriologic studies. The meningeal signs developed in the course of a general infection following an abortion. Two injections of ethylhydrocupreine hydrochloride brought about full recovery.

Campbell [8] describes briefly a case in which cerebrospinal fluid was reported to reveal on smear and in culture the pneumococcus organism. Repeated lumbar punctures resulted in gradual improvement, but there soon appeared signs of cerebral abscess. The latter was found and drained. Slow and complete recovery took place.

In Ervin's [9] case of pneumococcus cerebrospinal meningitis, the author's statement must be accepted that it was possible to demonstrate in the spinal fluid a gram-positive diplococcus with capsule, which proved to be pneumococcus. His patient was given Huntoon's pneumococcus antibody solution intradurally and intramuscularly in addition to repeated lumbar punctures. Recovery followed.

While this small series of cases does not exhaust all the recorded recoveries from pneumococcus meningitis, it, as well as our own case, serves to discount the common belief that pneumococcus meningitis is always fatal.

REPORT OF CASE

History.—L. E. a schoolboy, aged 15 years, admitted to the hospital, Jan. 25, 1927, had had the common diseases of childhood without sequelae, and at the age of 11 years had undergone an intranasal operation (submucous resection). His present illness dated back to two weeks before admission, when a sudden discharge began from both ears. This was not associated with pain and lasted only one day. He then remained apparently well for the next ten days, but two days prior to his admission to the hospital he began to complain of pain in the left ear. The ear did not discharge. Twenty-four hours later his temperature began to rise, and intense headache developed. He vomited several times and gradually went into a stupor.

* From the Neurological Service (Dr. Israel Strauss, attending neurologist), Mount Sinai Hospital.

1. Kolmer, J. A.: A Résumé of the Present Methods of Septic Meningitis with Recommendation of Methods, Arch. Otolaryn. **3**: 481 (June) 1926.
2. Parkinson, P. J.: A Case of Postbasal Meningitis Due to Pneumococcus Lanceolatus; Recovery, Brit. J. Child. Dis. **1**: 112, 1904.
3. Stewart, F. W.: Local Specific Therapy of Experimental Pneumococcus Meningitis (Second Paper), J. Exper. Med. **46**: 409 (Sept.) 1927.
4. Cupler, R. C.: Primary Cryptogenic Pneumococcus Cerebrospinal Meningitis, with a Report of Three Cases, M. Rec. **68**: 815, 1905.
5. Cumming, J. H.: A Case of Pneumococcus Cerebrospinal Meningitis, Lancet **2**: 1294, 1912.
6. Brown, A. C.: Pneumococcal Meningitis with Recovery, Lancet **2**: 519 (Sept. 16) 1916.
7. Rosenow, George: Heilung der Pneumokokken Meningitis durch Optochin, Deutsche med. Wchnschr. **46**: 9 (Jan. 1) 1920.
8. Campbell, James: Pneumococcus Meningitis, Lancet **1**: 54, 1925.
9. Ervin, C. E.: Pneumococcus Cerebrospinal Meningitis with Recovery, Atlantic M. J. **28**: 590 (June) 1925.

Examination.—The patient was well developed and well nourished. He was drowsy and flushed. The temperature ranged from 103 to 106 F. There was marked retraction of the neck and a bilateral Kernig sign. The knee jerks were present; the pupils were round and equal, and reacted well to light and in accommodation. There were no localizing signs of cerebral involvement.

Course.—Lumbar puncture was done immediately after admission. It yielded 60 cc. of turbid fluid, containing 12,000 cells per cubic millimeter, with 96 per cent polymorphonuclear neutrophils. A smear of the centrifugalized cerebrospinal fluid showed many gram-positive diplococci. A culture of the spinal fluid taken at the same time revealed later a pure growth of pneumococcus, which on typing was found to be of group IV. The blood count showed 30,000 white blood cells per cubic millimeter, with 90 per cent polymorphonuclear neutrophils. The urine contained a faint trace of albumin. The blood Wassermann reaction was negative. The ears were examined by an otologist and were found to be apparently normal, with all the landmarks intact. In spite of this, however, the case was regarded as an instance of acute pneumococcus meningitis of otitic origin, and it was felt that the only therapeutic measure of promise available was drainage of cerebrospinal fluid. Accordingly, frequent lumbar punctures were carried out: For the first ten days, punctures were made three times a day: each time, with the fluid flowing freely, from 30 to 60 cc. was usually withdrawn. Repeated cultures of the cerebrospinal fluid were taken, January 30 and February 6, and showed, as on the first occasion, pneumococcus type IV; the blood culture remained consistently negative. The patient's temperature for the first few days varied between 102 and 105, and usually would decline somewhat soon after a lumbar puncture to rise again, however, within short time. At the time of admission, when the causative organism was still unknown, the patient was given one intraspinal injection of antimeningococcus serum, but as soon as the true causative agent was discovered from the cultures the serum injections were abandoned and intensive drainage of the subarachnoid space was continued. February 11, at the end of the first two weeks of the patient's residence in the hospital, his condition suddenly declined. The temperature rose to 104, and the fluid once again became thick and sanguinopurulent, with signs of meningeal irritation becoming more prominent. The following day (February 12) all efforts to obtain spinal fluid by the lumbar route failed. Adhesions had apparently formed at the point of puncture and given rise to a block. February 13, a cisternal puncture was done for the first time; 50 cc. of yellow turbid fluid was obtained. There were 960 cells per cubic millimeter, with 76 per cent polymorphonuclears. The temperature dropped and the patient was more comfortable. The rigidity of the neck diminished. Another cisternal puncture was done, February 15, and the fluid was still xanthochromic, but the number of cells dropped to 180 per cubic millimeter. The temperature was still down and stayed down until February 17, when it began to rise again; another attempt to obtain cerebrospinal fluid through lumbar puncture was made, but only after air was injected into the subarachnoid space was a free flow of fluid produced. The injection of air was carried out in the hope of breaking up the adhesions. This resulted in immediate relief, and the patient continued to improve until March 1, when quite suddenly the temperature rose to 104 and the meningeal signs reappeared. On the subsequent day two other cisternal punctures were done with resulting improvement, the temperature returning almost to normal. For the first time the spinal fluid was reported sterile.

In spite of the continued improvement and the freedom from meningeal signs the patient continued to have an elevation of temperature in the afternoon with a mild rise to 101. Because of this condition, and in an attempt to avoid productive inflammatory changes in the meninges, intravenous injections of *Staphylococcus pyogenus-aureus* vaccine were thought to be advisable. March 3, the first dose of 50 million organisms was given. Four injections altogether were administered, the last dose, consisting of 150 million organisms, being given, March 11. Each injection was followed by a febrile reaction.

From that time on the patient became afebrile, and his convalescence progressed uneventfully. He was discharged, April 4. He was able to walk around and was almost totally free from meningeal signs, though there was still some tenderness over the lumbar spine, and pain was elicited on testing for the Kernig sign. Repeated examinations of the fundi throughout the clinical course did not show any abnormalities, and ear examinations did not reveal any evidence of involvement of the drums. It is noteworthy that in spite of the protracted and the often unusually high temperature the patient did not at any time show toxic or psychic manifestations.

During March, 1927, a slight weakness of the left ankle was noted. A Kernig sign was not elicited. This weakness of the ankle improved gradually, so that at present he is fully restored to health, and participates in all outdoor activities in the country, where he is convalescing now.

When seen recently (Sept. 15, 1927) eight months after the onset of the illness, the patient was found to be free of any signs or symptoms, and was active at his work.

COMMENT

In presenting this case, our aim is not only to put on record one more unusual recovery from a fully established case of pneumococcus meningitis of otitic origin, but also to stress the value of intensive subarachnoid drainage, one of the two outstanding measures in the treatment of septic meningitis, the other being serum therapy. While the former was used almost exclusively in our case, fifty lumbar and six cisternal punctures having been made, serum was employed in another instance.

It is obvious from the small series of cases here reviewed, and from general discussions on the subject, that subarachnoid drainage is an important and valuable measure. Its service, however, is dependent to a large degree on the intensity and frequency with which it is employed in a given case, since its value lies in insuring the removal of large quantities of fluid at frequent intervals. To attain this, several methods are available. Frequent lumbar punctures, the earliest methods of approach, have not yielded uniformly good results. There are several reasons for this. The frequent traumatization of a small circumscribed area of the leptomeninges at the point of puncture often leads to local adhesions and block, thus defeating the purpose of this procedure exclusively. Then again, each additional puncture through the intravertebral disk becomes more and more painful, finally arousing the protest and resistance of the patient.

To obviate possible adhesions and to insure continuous drainage, laminectomy and the insertion of rubber tubing was tried. Leighton and Pringle,[10] Hill[11] and somewhat later Rainey and Alford[12] reported some cures by this method. According to these authors, however, it is useful only in streptococcus and staphylococcus infection. Besides, it appears to us a somewhat formidable procedure that is hardly justified by the few reported beneficial results.

For a similar purpose Dandy[13] offers his method of continuous drainage by the cisterna magna route to be employed only in the treatment of meningitis in which the infecting organism is staphylococcus and streptococcus. His method approaches the character of a major operation, and a less formidable measure of proved value is available.

10. Leighton, W. E., and Pringle, J. A.: Recovery in Two Cases of Streptococcus Meningitis Following Lumbar Laminectomy and Drainage, J. A. M. A. **64**: 2054 (June 19) 1915.
11. Hill, Roland: Laminectomy for Meningitis, Surg. Gynec. Obst. **33**: 288 (Sept.) 1921.
12. Rainey, W. R., and Alford, L. B.: The Treatment of Septic Meningitis by Continuous Drainage, J. A. M. A. **81**: 1516 (Nov. 3) 1923.
13. Dandy, W. E.: The Treatment of Staphylococcus and Streptococcus Meningitis by Continuous Drainage of the Cisterna Magna, Surg. Gynec. Obst. **39**: 760 (Dec.) 1924.

Thus, combined and alternating lumbar and cisternal punctures provide ample means for fairly constant drainage. Cisternal puncture in the hands of the experienced offers practically no inconvenience for the patient; it is less apt to produce adhesions, and it can be repeated as often as necessary. As no rigid structures are passed by the needle and since mild local anesthesia makes the puncture almost painless, it can be employed with a frequency to insure almost continuous drainage.

Nevertheless, though this method gave good results in our case, it is not recommended to the full exclusion of any other therapeutic measure. In fact, we believe that in selected cases serum therapy is of advantage when used in combination with the suggested form of subarachnoid drainage.

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MEDICAL ASPECTS OF COLITIS*

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Colonic disease occurs in tuberculosis, syphilis, amebiasis, neoplasms, achylia gastrica, pernicious anemia, sprue, pellagra, exophthalmic goiter, Addison's disease, actinomycosis, chronic uremia and mercury and arsenic poisoning. In the present discussion, these diseases will be omitted from consideration.

The form of colitis to be discussed here may be defined as a condition of the colon, beginning with evidences of irritation, especially the descending and sigmoid portions, occurring usually after the age of 30, and passing through repeated relapses and several stages of increasing severity to actual inflammation and ulceration.

It is characterized by constipation of the spastic type, alternating with explosive attacks of diarrhea, with painful abdominal cramps and the passage of mucus. In long standing cases, blood and pus may be present. Reflex gastric disturbances are a part of the symptomatology.

No one specific cause is known, though the following factors are generally recognized as contributory to its development. First and most important is a spastic condition of the colon (vagotonia), which appears to occur without other intra-abdominal disease but may be exaggerated by such conditions as enteroptosis, coloptosis, nephroptosis, and chronic disease of the gallbladder, appendix, or pelvic organs. The relation of colitis to the neuroses is recognized even by conservative clinicians in their reference to the influence of the vegetative nervous system and the glands of internal secretion. External factors, such as produce emotional stress, fatigue, overheating and chilling, are known to precipitate attacks, or when they are present to increase their severity. In women, attacks are more common at the menstrual period.

Recently, food allergy,[1] a sensitization to certain articles of diet, has been described as a cause, and several cases have been cured by abstinence from the specific foods. However, it should be noted that all foods producing a skin reaction did not produce colonic disturbance.

The relation of the condition to a constitutional defect was recognized long ago by Strümpell, who spoke of mucous colitis as "asthma of the colon."

In the early stages, proctoscopic examination shows a dry, glazed mucous membrane, with large and small patches of tough, leathery mucus attached. These are removed with difficulty and sometimes cause bleeding. The mucus contains a great deal of calcium phosphate and calcium oxalate, sometimes in the form of "intestinal sand," white blood cells and sometimes red blood cells.

In the later stages, ulceration, fibrosis, adhesions, diverticulitis and pericolitis develop, and mucus, pus and blood appear in the feces.

The real significance of the symptoms can be appreciated only if one studies in chronological sequence the various phases during remissions and relapses, and not by simply describing the various separate features. This leads one through the consideration of three conditions usually described as separate entities; namely, spastic constipation, mucous colitis and ulcerative colitis.

The suggestion is offered that these are simply different stages in one disease process. I do not know of any writer who has said this in so many words, but I am convinced that such is the case, because the contributions to the study of disease by internists,[2] roentgenologists[3] and gastro-enterologists[4] are consistent with this conclusion.

Adolph Schmidt delimited spastic constipation and indicated a rational physiologic treatment. Stockton[4] writes:

> A common result of vagotonia is spastic constipation predisposing to sigmoiditis and mucous colitis. It (mucous colitis) often follows and is always accompanied by spastic constipation. There are two factors that stand out conspicuously as related to mucous colitis: the first is spastic constipation and the second is enteroptosis.
>
> Colitis is essentially an inflammation of the lining of the colon, a result of infection. Chronic constipation, especially delay at the cecum, sigmoid and the hepatic flexures, are counted as contributory factors through causing irritation. Inflammation follows when pathogenic bacteria are present and when the immunity of the individual is lowered. . . . A vagotonic state of the colon inducing overtonicity, or spasm, exciting unnatural secretion of the mucous lining, favors the advent of infection. . . . For reasons not yet fully known the ordinary intestinal flora become pathogenic; or the cause may be attributed to harmful organisms yet to be recognized.

It is therefore more logical to approach this subject in discussion, as well as in actual practice, by considering the symptomatology and treatment under three phases or stages, even though infection, specific or otherwise, may be a final stage. Naturally, every individual case does not pass through all stages.

STAGE 1. SPASTIC CONSTIPATION

Spastic constipation is characterized by the passage of dry, hard faceted masses of feces, not containing any remains of recognizable food (complete digestion). The particles are usually covered with more or less mucus, usually tough and membranous. The fecal bolus often falls apart in the commode and even resembles sheep or rabbit droppings.

The roentgenogram, after a contrast meal, shows spasticity of one or more portions of the colon. The

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* Read before the Medical Society of the District of Columbia, Oct. 19, 1927.

1. Hollander, Edward: Mucous Colitis Due to Food Allergy with a Report of Few Cases, Am. J. M. Sc. **174**: 495 (Oct.) 1927.

2. Schmidt, Adolph: Klinic der Darmkrankheiten, Weisbaden, J. F. Bergmann, 1913.

3. Kantor, J. L.: Colon Studies III, Am. J. Roentgenol. **16**: 1-9 (July) 1926.

4. Stockton, C. G.: Oxford Medicine, New York, Oxford University Press, **3**: 247-258, 1921.

barium enema may not demonstrate the condition so distinctly.

The sigmoid is palpable, firm and tender, pressure often producing reflex pain on other parts of the abdomen.

Laxatives frequently fail to act when given in the usual dose, and when the dose is increased, or a strong purgative is used, cause cramps and an explosive diarrhea, which in turn is again soon followed by an attack of constipation. Liquid petrolatum often trickles through the bowel without producing an evacuation. So-called laxative food, such as coarse, bulky, cellulose bran containing roughage or salads, like the purgative often cause cramps, gastric disturbance and ultimately diarrhea.

The condition, even at this stage, is notably influenced by external conditions, as cold, fatigue, emotional stress, excitement, and social or business stress, and various other features, commonly accepted as evidence of nervous and vasomotor disturbances, are presented.

During this stage, the patient usually treats himself according to popular notions with coarse food, little meat, "nature's remedies," purgatives, enemas, cascades, massage and "plenty of exercise," and is often an habitué of some "colon filling station."

When he consults the physician it is for "indigestion"; that is, gas in the stomach, eruction, pain about the heart, headache, fatigability and symptoms of eye strain, common evidences of autonomic imbalance. Needless to say, treatment of the "stomach" and the digestive process will not give any relief.

The proper management of this stage of the disease is just the opposite of the popular method of treating constipation; namely, a bland diet (no roughage), sedatives, carminatives, hydrotherapy in the form of hot packs or hot baths, and very moderate exercise or rest. There should not be any enemas (except the nightly instillation of liquid petrolatum or gelatin solution), any deep massage of the bowels, or any irrigations. The establishment of normal hygiene in eating and in regular defecation should be encouraged. I have known patients with marked constipation and abdominal symptoms to enter the hospital for a survey, and while in bed on a bland diet to have regular voluntary bowel movements without laxatives or enemas.

STAGE 2. MUCOUS COLITIS

Mucous colitis has been described so fully and so well that reference to a standard work is sufficient.[4] Stockton distinguishes spastic constipation from mucous colitis, but says that "this condition should be regarded not as a definite disease, but as a syndrome dependent upon one or more etiological factors not always clearly defined."

Mention of the following principal features is sufficient to recall the symptomatology:

1. Mucous colitis often follows and is always accompanied by spastic constipation.
2. There is a characteristic discharge of mucus.
3. Paroxysmal attacks of pain with abdominal distress occur, associated with disturbances in other regions; for example, anginoid attacks.
4. Alternating constipation and diarrhea are present.

What should be repeatedly emphasized is this: The critical attacks of mucous colitis have been diagnosed as acute surgical diseases of the abdomen, and, on the basis of abdominal pain, tenderness, rigidity, slight fever, slight leukocytosis and vasomotor phenomena, operations have been performed. The diagnosis of the condition in this stage depends on an acquaintance with the characteristic history, as well as the prompt response of the patient to physiologic therapy.

The treatment of this condition is the same as that already given for spastic constipation; in addition, rest is more strictly enforced and calcium lactate and acidophilus milk have seemed to be of definite value.

STAGE 3. ULCERATIVE COLITIS

The principal features of the third stage are diarrhea, alternating with shorter periods of constipation. There is usually irregular bowel action, with stools varying in consistency from mushy to hard and lumpy. In advanced cases the diarrhea is persistent and frequent, and sometimes (when proctitis is present) is accompanied by tenesmus. Mucus, pus and blood are present in the feces, and sometimes are passed alone. The abdomen is generally sore, and especially tender over the colon area. There is pain, soreness and tenderness across the abdomen and in the left side, especially noted in the early morning hours, and also after meals, as the digestion of food stimulates colonic peristalsis; fever is present at times. Reflex gastric disturbances inhibit adequate food intake, and nutrition becomes impaired. Roentgen-ray examination, both with the barium meal and with the enema, gives a characteristic picture. Haustral markings are indistinct or obliterated, and there is a "feathery" or flaky distribution of the barium. On proctoscopic examination, ulcers are found.

The major indication at this stage is the prevention of the intercurrent attacks of constipation. Therefore, opium and astringents by mouth are contraindicated. The Schmidt test diet should be used to determine the kind and degree of impairment of the digestion, if any, and a strictly bland diet ordered in accordance with the observations. It is futile to withhold food or to prescribe a diet of soups and broth; feces will be formed in any case, and the aim should be to keep them large and soft. Enemas should be avoided; purgatives are a direct trauma. The bowels will move if spasm is controlled. Therefore, strict rest in bed, the application of hot wet packs or poultices to the abdomen, and the giving of sedatives and carminatives in full doses are in order. Liquid petrolatum or gelatin solution may be instilled, to be retained over night. The use of an agar preparation is of value in preventing the formation of small, hard, scybalous feces. Calcium lactate in adequate dosage apparently reduces spasm and irritability. Acidophilus milk is beneficial. Vaccines and bacterial filtrates have been used with benefit and with failure. Bargen[5] of the Mayo Clinic has reported the best results. Others following his method have not, as yet, had such strikingly good results. Since not only function but also susceptibility to infection may be favorably influenced by general measures, heliotherapy and the administration of cod liver oil in combination with hygienic management are indicated as an aid to any more specific therapy that may be available.

When the colon becomes so extensively diseased that it not only loses its function but is a site of infection and septic absorption, the process is then irreversible, and removal is indicated in a two stage operation.

Irrigation through the appendix is less satisfactory, and the benefits are not permanent.

5. Bargen, J. R.: Transactions of Gastro-Enterological Association, 1927.

SUMMARY

1. Spastic constipation often precedes and always is associated with the nonspecific form of colitis.

2. The treatment of spastic constipation is therefore not only a prophylactic measure but also an important part of the management of colitis.

3. The principles of treatment should be based on the constitutional character of the disturbance, and should be sedative rather than stimulative.

1720 Connecticut Avenue.

THE GRAHAM STEELL MURMUR

REPORT OF CASE *

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The rarity of the Graham Steell murmur and especially the rarity of its confirmation by postmortem examination, together with the confused ideas as to its occurrence and significance in the minds of most physicians, show the need of such a case report as that which follows.

The Graham Steell murmur [1] is the early blowing diastolic murmur heard along the left border of the sternum due to functional regurgitation through the pulmonic valve. The pulmonic valve itself is not diseased; its ring of attachment is stretched as a result of chronic pulmonary hypertension from marked mitral stenosis. The pulmonic artery is dilated. At postmortem examination the valve ring may not be widely dilated, the leak being largely the result of hydrodynamic effects during life.

Generally, when the Graham Steell murmur has been diagnosed during life, aortic regurgitation has been found post mortem, explaining the supposed pulmonic regurgitant murmur. Thus it is unwise to interpret such a murmur as the Graham Steell unless the evidence, as in the case reported here, is quite complete. Graham Steell [2] himself found only rare cases: one case out of seventeen with mitral stenosis examined post mortem, and two other probable cases out of forty-three with mitral stenosis not examined post mortem. The instance here presented is the first one in which I have made the diagnosis of the Graham Steell murmur without question ante mortem that has been confirmed at postmortem examination. The murmur is rare, but it does exist.

REPORT OF CASE

History.—N. C., a white woman, aged 35, single, employed as an office clerk, entered the hospital, March 17, 1921, complaining of heart trouble dating back ten or twelve years, with dyspnea on exertion since the onset. For the three weeks prior to entry she had been acutely ill with palpitation, smothering sensation, and orthopnea. The present illness began after she had climbed stairs. For the two weeks before admission she had been in bed. Edema had accumulated a few days before admission.

The past history revealed three attacks of rheumatic fever at the ages of 10, 11 and 16 years, respectively. She had also had tonsillitis, but the tonsils had not been removed. She had not had chorea.

Physical Examination.—The patient was very ill and orthopneic, with slight but definite cyanosis of the mucous membranes. The pupils were equal and regular, and reacted to light and distance normally. The teeth were poor, and there was much pyorrhea. The tonsils were small. The cervical veins were markedly engorged. The thyroid gland was normal, and there was no exophthalmos. The cervical glands were not enlarged. The lungs were clear. The apex impulse of the heart was felt in the fifth space, 11 cm. to the left of the midsternal line and 3 cm. beyond the midclavicular line. There was increased dulness to percussion in the second and third interspaces to the left of the sternum. The heart rate was absolutely irregular and very rapid, being counted by the intern on examination as 240 a minute (?). The pulmonic second sound was accentuated. It was difficult to make out any murmurs at the time because of the tachycardia. The blood pressure was 80 mm. of mercury systolic and 60 diastolic so far as could be determined. The pulses were small. The arteries were soft. The abdomen was distended and tympanitic, without masses or spasm. There was tenderness in the right upper quadrant, and the liver edge, felt 10 cm. below the costal border, was slightly tender. The spleen and kidneys were not felt. The extremities showed slight tremor of the hands. Clubbing of the fingers, and petechiae were not seen. There was well marked edema over the back and sacrum but not over the shins. The knee jerks were present. There was slight jaundice but no fever at entrance.

The urine showed a large trace of albumin, but no sugar; the specific gravity was 1.023, and the sediment was loaded with hyaline and granular casts. Renal function (red test) was 25 per cent in two hours. The blood showed a leukocytosis of 28,800 with 91 per cent polymorphonuclears. The stool was normal. The Wassermann reaction was negative. Cultures of the blood did not show any growth. An electrocardiogram showed a coarse type of auricular fibrillation with very rapid ventricular rate.

Treatment and Course.—Under a regimen of rest in bed and full digitalization, begun with fluidextract of apocynum and continued with digitalis, the patient improved rapidly and markedly. She remained in the ward for one month, showing at first slight fever (100 F.). This slight temperature was probably associated with a mild attack of articular rheumatism; the left shoulder was painful for a few days. The leukocytosis gradually declined to a normal white count. The urine cleared, so that no albumin was found in it at the time of discharge. The heart rate dropped to 70 under the effect of digitalis, and there was very little pulse deficit. At the time of admission there had been an extensive pulse deficit; the radial rate was given as about 70, while the apex rate was very high. When the patient was discharged, April 22, 1921, the apex rate was 62 and the radial rate, 58. The edema had disappeared, and the blood pressure was 110 systolic and 65 diastolic. After the pulse rate slowed, it was possible to determine the condition of the valves. A loud rolling diastolic murmur was found at the apex. The heart rhythm continued absolutely irregular. The patient was discharged and placed under the supervision of her local physician. In August, 1921, there was another attack of congestive failure with much dropsy. The patient stayed in bed at home under the care of her local physician until March 22, 1922. She improved very much, and for two years did well but did not work.

When she was seen in consultation, Jan. 17, 1924, although she was still limited in activity by dyspnea, she felt fairly well, was getting restless, and wanted to work. Besides the dyspnea, she had some irregular palpitation on exertion and occasional knifelike precordial pain radiating to the left shoulder on exertion and when tired. She was easily fatigued. Physical examination at this time showed a definite cyanotic flush over both cheek bones, marked enlargement of the heart, a loud first sound at the apex, a loud pulmonic second sound, and blowing systolic and marked rumbling diastolic murmurs at the apex. There was absolute arrhythmia; the pulse rate at the apex was 150 and at the wrist 110, with a deficit of 40. The lungs were clear. The abdomen was normal, and the liver was not felt. There was no edema over the extremities, and no clubbing of the fingers was found. The electrocardiogram at that time showed auricular fibrillation, diphasic T waves in lead II, and well marked right axis deviation. She

* From the Massachusetts General Hospital.

1. Steell, Graham: The Murmur of High Pressure in the Pulmonary Artery, Medical Chronicle 9: 182 (Dec.) 1888.

2. Steell, Graham: The Auscultatory Signs, etc., of Mitral Stenosis; a Statistical Enquiry, Medical Chronicle, new series 3: 409 (Sept.) 1895.

was advised to increase the dose of digitalis, which she had been taking in small doses, until the heart rate was reduced to normal.

Four weeks later the patient reported that she was feeling much better. The apex rate was 120 and was still absolutely irregular. She was working a little at sewing and embroidery.

Two months later, after again increasing the dose of digitalis, she felt better and the heart rate was reduced to 100.

In June, 1924, she reported that she was doing very well and was working.

In February, 1925, she was seen again but at this time she was not so well because of trouble during the winter from abscessed teeth and nervous shock (her landlord had committed suicide). The heart rate at that time was 90, and the pulse rate absolutely irregular. The apical systolic and diastolic murmurs were as before. There was no edema.

From February, 1925, to November, 1926, the patient lived a very limited life, sometimes being able to do a little work, but often laid up with orthopnea, edema and weakness. With rest in bed and digitalis the edema would subside, and after a few weeks in bed she would be able to return to quiet activity for a few weeks. Then the symptoms would return again.

Second Admission.—In October, 1926, the patient grew much worse. The edema and orthopnea did not subside, and she was obliged to reenter the hospital, November 10. She remained until April 12, 1927, with persistent edema of the legs and lower back, enlargement of the liver and ascites of varying degree. With constant attention and the use of digitalis, diuretics, sedatives and repeated abdominal paracentesis, she showed little change in the course of five months. She was very ill throughout this period.

Physical examination of the heart did not show any change over the previous observations except that in addition to the blowing systolic and rumbling diastolic murmurs at the apex there was constantly found now a new murmur, namely, a loud blowing early diastolic murmur, moderate in degree along the left border of the sternum but marked and maximal in the second left interspace. It was only faintly heard over the aortic area and along the left lower border of the sternum, and not heard at the apex. The pulmonic second sound was very loud. The apex rate during the patient's stay in the hospital varied between 130 and 55, with a pulse deficit ranging from 65 to 5 beats a minute. The blood pressure averaged about 150 systolic and 90 diastolic. There was occasional slight fever and also occasional cough with râles in the lungs. The pulse was never Corrigan in type. In addition to the early blowing diastolic murmur in the second left interspace, a systolic murmur with prominent pulsation and increased dulness to percussion was localized in that area. The urine showed constantly a large trace of albumin, but no sugar or bile; the specific gravity ranged from 1.010 to 1.025, and casts and cells were present in the sediment. There was a frequent but not constant leukocytosis. Several blood cultures failed to show any growth. There was no anemia. The Wassermann reaction was negative. The nonprotein nitrogen of the blood was normal. Renal function (red test) varied from 25 to 50 per cent. The electrocardiogram on two occasions showed auricular fibrillation with ventricular rates of 70 and 90, inverted T waves in lead II, and well marked right axis deviation as before. A roentgenogram of the heart showed marked enlargement in all diameters with evidence of congestion of the lungs. It was not thought from the roentgen-ray study that pericardial effusion was present.

The patient was discharged, April 12, to a convalescent home, where she died, April 18, with symptoms and signs suggesting extreme cardiac failure, shortly after two attacks of acute pain in the right thigh and right arm, respectively, and with hemorrhage from the bowel occurring a few hours before death.

Postmortem Examination.—On the basis of the conditions attending death, a clinical diagnosis of mitral stenosis, with a Graham Steell murmur, was made. The anatomic diagnosis was: rheumatic heart disease, with mitral stenosis; relative pulmonary insufficiency, and chronic passive congestion.

Postmortem examination by Dr. Tracy B. Mallory, April 18, 1927, eleven hours after death, showed the body poorly developed and nourished. The abdomen was extremely distended. Beneath the umbilicus was a circular puncture wound, presumably from a trocar. There was almost no subcutaneous fat. The muscles were small and normal in color and consistency.

The peritoneal cavity contained more than 4 liters of clear straw colored fluid. After removal, the peritoneal surfaces appeared smooth and glistening. The appendix and the esophagus were normal. The mucosa of the stomach was deeply congested and much thickened, the congestion extending downward throughout the intestinal tract. The mesenteric and retroperitoneal glands were normal. The margin of the liver extended 2 cm. below the costal border in the midclavicular line, and 7 cm. below the ensiform cartilage. The diaphragm extended to the third interspace on the right, and to the fifth interspace on the left.

The right pleural cavity was entirely obliterated by old fibrous adhesions. The left cavity showed a few adhesions and a small amount of clear, straw colored fluid. The lungs showed a uniform increase in consistency, and on cross-section exuded large quantities of frothy, blood-stained fluid.

The pericardium contained 150 cc. of clear straw colored fluid. The heart weighed 560 Gm., including the thoracic aorta and a large thrombus in the left auricle estimated to weigh 60 Gm. The valve measurements (circumference), after fixation in solution of formaldehyde, were: aortic, 7 cm.; mitral, 2.5 cm.; pulmonic, 8.5 cm., and tricuspid, 10 cm. The right ventricular wall was 12 mm. thick, the left ventricular wall, 16 mm. The right auricular wall measured 3 mm., the left, 4 mm. The aortic valve showed a slight interadherence of the cusps, but no suggestion of valvular insufficiency. The curtains of the mitral valve were extremely thick, dense and fibrous, with a trace of calcification. The surfaces showed a fine granular appearance in two spots, but no fresh vegetations. The chordae tendineae were markedly shortened and thickened. The tricuspid valve was negative except for dilatation of the ring in the fresh specimen. There were no deformities of the cusps. The left ventricle was slightly dilated. The papillary muscles were definitely hypertrophied. The left auricle was greatly dilated and the walls were greatly thickened; about half the cavity was filled by a large adherent thrombus. The right ventricle was greatly dilated and hypertrophied. The columnae carneae were more than twice the normal size. The right auricle also showed dilatation of the cavity and marked hypertrophy of the walls.

There was slight sclerosis of the aorta. The pulmonary artery was definitely dilated, with slight sclerosis of the intima. The venae cavae were normal.

The liver was slightly enlarged, with very prominent markings and slightly irregular surface. The gallbladder and the bile ducts were normal. The pancreas and its ducts also were normal.

The spleen was slightly enlarged and firm. There was a transverse linear scar 6 cm. in length. Toward the hilum was a sharply defined white wedge-shaped area measuring 2 by 4 by 1.5 cm.

The suprarenal glands were normal.

The kidneys were normal in size. The capsules stripped with slight difficulty, leaving finely granular surfaces. The pelves were negative. In the cortex of the right kidney was a white wedge-shaped area, with bright red borders, measuring 1.5 cm. in diameter.

The bladder, uterus, tubes and ovaries were normal.

Microscopic examination showed marked congestion of the lungs, with many pigment filled endothelial leukocytes. In the liver, there was extreme congestion of the centers of the lobules. The liver cords were narrowed, and in many instances the liver cells had entirely disappeared.

Training of a Good Physician.—Without a scientific training it is impossible to become a good doctor; with a scientific training and reasonable endowments of character and intelligence every doctor may play a part in advancing the knowledge which is required for the alleviation and prevention of the sufferings of mankind.—Paton, D. N.: *Edinburgh M. J.* **35**:10 (Jan.) 1928.

TREATMENT OF TABES DORSALIS BY EPIDURAL INJECTIONS OF NEOARSPHENAMINE

PRELIMINARY REPORT *

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In my studies of the pathology of tabes dorsalis I frequently encountered inflammatory phenomena in the posterior epidural space of the spinal cord as well as in the dura itself. The changes were always associated with inflammation and hyperplasia of the perineurium of the spinal roots, especially of the posterior roots, and spinal cord changes typical of tabes dorsalis. Whether the tabetic cord changes are due to the epidural and other changes mentioned, that is to say, whether there is a causal relationship between the epidural and the spinal cord changes, I am not as yet prepared to say as my studies are not completed. Here I wish merely to state that such a view of the pathogenesis explains the changes seen in tabes better than any so far offered, and that it also suggests a method of treatment that seems to be more rational and effective than any so far used.

The method consists in injecting neoarsphenamine into the epidural space, which, as I hinted, is the probable primary seat of the spinal root and cord changes. The doses are the same as those used for intravenous injection, though 0.3 Gm. dissolved in 10 cc. of double distilled water is sufficient. The injections are given with a spinal puncture needle through the sacral hiatus into the sacral canal which is continuous with the spinal epidural space. They are given twice a week for a period of four weeks or less, depending on the degree and rapidity of improvement. Each epidural neoarsphenamine injection is preceded by the hypodermic injection of 2 cc. of a 2 per cent solution of procaine hydrochloride. In general, the method here used is the same as that introduced and elaborated by Cathelin, Läwen and others, extensively used in inducing so-called sacral anesthesia.

So far, forty patients (thirty-five men and five women) have been treated by the epidural method. The majority of the patients were treated at the Cook County Hospital, some (seven cases) at the Research and Educational Hospital of the University of Illinois. All possible clinical types of tabes were represented—shooting pains, gastric crises, ataxia, optic atrophy, bladder disturbances, paresthesias and Charcot joints; the majority of the cases were quite advanced, though there had been repeated treatment with arsphenamine and by other methods. The injections were given by myself and my associates (Drs. Ettleson, Bohrod, Raymond, Soper, Snow, Hayden and Bengston), who carefully watched and noted the progress of the disease.

The most striking improvement was in the gait, the Romberg phenomenon, the ataxia and the shooting pains. No results were obtained in the Charcot joint type of tabes, while optic atrophies and crises gave results indefinite and inconstant. However, the general conditions of sleep, appetite, color of skin, and psychic and physical states improved even in apparently hopeless cases. The favorable effect was usually noticed after the first two injections, to which the patients, both men and women, have submitted willingly and which they generally bore well. In view of the large amount of neoarsphenamine introduced into the loose, soft connective tissue which forms the main contents of the sacral canal, one is indeed surprised at the absence of distressing complications, such as are seen after accidental subcutaneous injections.

Of 125 injections given, only one proved disastrous. This was in a man with the tabetic type of general paralysis, who a few months previously had improved considerably after malaria treatment and had been able to resume work. May 8, 1927, he consulted the resident of the neurologic service at the Research and Educational Hospital for "rheumatism" in the lower extremities and "tabetic" gait. The same day 0.3 Gm. of neoarsphenamine dissolved in 10 cc. of distilled water was injected epidurally; three days later, 0.5 Gm. was given. The day after the latter injection the patient complained of pain in the lower extremities and weakness in the feet, which in a few days was followed by paralysis and sensory, bladder and trophic disturbances. The clinical picture was that of myelomalacia, and within a week the motor and sensory disturbances extended upward to involve completely the right and partly the left upper extremity. Death occurred one month after the first injection. The necropsy, performed by Dr. Jaffé a few hours after death, revealed, grossly, necrosis of the epidural tissues and an apparently normal spinal cord. Microscopic studies showed that several bundles or roots of the lowermost portion of the cauda equina were also completely necrosed; the perineurium was hyperplastic, the dura was normal; the epidural tissues were enormously infiltrated; the sacral portion of the spinal cord showed liquefaction of the anterolateral tracts and absence of myelomalacia or other changes higher up. The conclusion arrived at by Dr. Jaffé and myself was that the neoarsphenamine solution had penetrated the dural sac; that is to say, the neoarsphenamine landed not in the epidural space but in the dural sac itself. To avoid puncturing the dural sac and other complications, it might be advisable not to pass the needle farther than about 8 cm. (3 inches), or, when this depth is passed, to keep it deviated from the median line; not to use force in injecting the solution, and to withdraw the needle in case the injection meets with resistance. It is also advisable to keep the bevel of the needle turned skyward. After the injection, the patient is kept in bed with the pelvis elevated, especially when injections are given for tabetic crises.

In two other cases, a somewhat similar condition appeared imminent, but fortunately it was confined to pain and urinary disturbances. In one of these cases, on June 3, 1927, 0.3 Gm. of neoarsphenamine was given epidurally for the relief of severe shooting pains which deprived the patient of sleep. Two days after the first injection, the shooting pains improved so much that the patient was able to sleep well throughout the night. Two more injections brought still further improvement, but after the fourth the patient complained of paresthesia and weakness in the lower extremities, bladder retention and restlessness. The condition improved slowly. Evidently a lesion of the cauda equina had been caused in this case by the injection of 0.3 Gm. of neoarsphenamine, although in the previous case the dose was much larger (0.5 Gm.).

* Read before the Chicago Neurological Society, Nov. 17, 1927.
* From the neurologic services of the Cook County Hospital and of the Research and Educational Hospitals of the University of Illinois.

The dosage apparently has nothing to do with the complication, which probably was due to some anomalies of the sacral canal or to faulty technic.

Except for these three unfortunate injections, or, rather, one, I have given about 125 injections with absolutely no bad effects or complications. The epidural method of neoarsphenamine treatment may therefore be considered harmless if proper precautions are taken.

In my series there were three patients with gastric crises. In one, a woman, the crisis disappeared for a period of three months after an epidural injection of 20 cc. of 2 per cent solution of procaine hydrochloride followed by five epidural injections of neoarsphenamine. In another patient, with juvenile tabes, the crisis did not yield to procaine hydrochloride (7 cc. of a 2 per cent solution) or to epidural injections of neoarsphenamine. However, this patient had only three epidural treatments; he had had, several months previously, intensive malaria treatment and generally reacted very poorly to any method. In the third patient, a man, aged 39, who had had gastric crises for about six years and in whom a rhizotomy had been performed in 1924, the results were better but rather inconstant. The operation gave him very slight relief. Aside from the crises, the patient did not have any other complaints, such as ataxia, sphincter disturbances and shooting pains. March 23, 1927, he received epidurally 0.3 Gm. of neoarsphenamine dissolved in 20 cc. of distilled water; five more injections were given within the next thirty-four days. Twice during the interval (March 31 and April 6) he received epidural injections of 10 cc. of 2 per cent procaine hydrochloride for the gastric crises. The latter disappeared after the sixth epidural injection of neoarsphenamine. May 15, 1927, 0.3 Gm. of neoarsphenamine was given intravenously. This was followed one hour later by a fresh attack of gastric crises, which lasted until May 17, 1927. After two more epidural injections the patient was discharged, as it was found that he had been a morphine addict and did not cooperate.

The results of the treatment of tabetic crises might be considered inconstant and not as uniform and certain as those obtained in the treatment of shooting pains, ataxia, and the other conditions mentioned. Here the results were decidedly good.

REPORT OF CASES

CASE 1.—A man, aged 44, admitted, March 28, 1927, complained of difficulty in walking and shooting pains in the legs for two years, poor vision for one year, and slight urinary incontinence.

Examination revealed a positive Romberg sign; markedly ataxic gait; Argyll Robertson pupils; hypotonia; poor coordination; absent tendon reflexes; impairment of the position sense; gray optic disks, and a positive Wassermann reaction of both the blood and spinal fluid (four plus).

April 8, an epidural injection of 0.3 Gm. of neoarsphenamine was given, and was repeated April 8, 13, 18, 22 and 26. The patient now walks unaided; pain has disappeared; the incontinence is less troublesome; the general condition is excellent, and the blood Wassermann reaction, May 9, was two plus.

CASE 2.—A man, aged 65, admitted April 24, 1927, complained of shooting pains for four and one-half months, inability to walk at all for two months, urinary incontinence for six months, and a girdle sensation. A chancre had occurred nine years before.

Examination revealed Argyll Robertson pupils; absent knee jerks; a loss of deep sensibility; a markedly positive Romberg sign; poor coordination; four plus Wassermann reaction in both spinal fluid and blood, and hypotonia.

The first injection, May 4, 1927 (0.3 Gm. in 10 cc.) was followed by injections on May 9, 11, 19 and 24 and on June 2. After the third injection, May 11, the patient was able to walk for the first time in two months, and a few days after the last injection, June 2, 1927, was able to walk unaided. The gait was only slightly ataxic, the incontinence and lightning pains disappeared, and the girdle sensation diminished. The Wassermann reaction remained unchanged. In this case an intravenous injection, May 14, 1927, was followed by a chill and shooting pain.

CASE 3.—A man, aged 39, admitted April 28, 1927, complained of difficulty in walking for one year and inability to walk without two canes for about one month. He also had urinary incontinence, especially at night.

Examination revealed frozen pupils; lost tendon reflexes; positive Romberg sign; hypotonia, and a four plus Wassermann reaction in the blood and spinal fluid.

Epidural injections of 0.3 Gm. of neoarsphenamine were given on May 4, 9, 15, 19, 29 and 31. The incontinence disappeared, and the patient became able to walk unaided though the gait is still ataxic.

These are only a few of the cases treated within a comparatively short period of a few months. It is not possible, therefore, to state how long the improvement will last or what will be the further course of the disease in general, or its effect on the serologic condition. The fact that a marked improvement is possible and obtainable in a short time makes this method of treatment of tabes worth using. I am not able to state whether this method should be combined with intravenous injections of arsenical preparations or with mercurial therapy. So far, I am using this method combined with mercurial therapy (inunctions).

It should be pointed out that the idea of epidural medication in tabes is by no means new. Strauss,[1] in 1903, used epidural injections of mercuric chloride, but they were soon discontinued because of the severe reactive phenomena that followed. In 1912, Läwen[2] gave epidural injections of procaine hydrochloride for relief of tabetic crises. In one case, 50 cc. of 1 per cent procaine hydrochloride solution stopped the pains but for a short time only. Nor did the epidural injections give results in a number of other cases. In one case the crises yielded to repeated injections of procaine hydrochloride (0.4 Gm. was given in one-half hour, in 70 cc. of sodium chloride solution), but the patient became almost pulseless and unconscious, and was revived with great difficulty. The pain returned one hour later. Läwen states that epidural injections of procaine hydrochloride in tabetic crises are contraindicated. In 1919, Moos and Warstat[3] used epidural injections of arsphenamine in six cases of tabes, in one of which the diagnosis was questionable. Thirty-four epidural injections were given, twice a week, and each injection contained 300 cc. of 0.05 per cent solution; that is to say, 0.15 Gm. of arsphenamine was given. In five cases, the spinal fluid was favorably influenced. They concluded that the epidural route for arsphenamine injection is less dangerous than other intraspinal methods, and that in animals they could demonstrate penetration of the spinal fluid from the subdural into the subarachnoid space.

1. Strauss, A.: Meine Resultate der epiduralen Eispritzungen durch Punction des Sacralkanals bei Syphilis und den funktionellen Erkrankungen der Harn- und Geschlechtsorgane, München. med. Wchnschr. **50**: 1206 (July 14) 1903.

2. Läwen, A.: Ueber die Verbindung der Lokalanästhesie mit der Narkose; ueber hohe Extraduralanästhesie und epidurale Injectionen anästhesierander Loesungen bie tabischen Magenkrisen, Beitr. z. klin. Chir. **80**: 168, 1912.

3. Moos and Warstat: Die Behandlung der Syphilis des Zentralnervensystems mit epiduralen Salvarsan injectionen, Dermat. Ztschr. **28**: 291, 1919.

Schönfeld,[4] in 1926, used arsphenamine epidurally in six and a silver arsphenamine in seven cases. Altogether he gave nineteen injections, for the purpose of determining whether arsenic thus introduced can reach the subarachnoid space and be demonstrated in the cerebrospinal fluid. As in all his cases the results were negative, he came to the conclusion that the epidural method of treatment of tabes cannot replace other "intralumbar" methods.

From these few references one may gather that the ideas advocated differ greatly from those expressed in the present contribution. Thus, my purpose in giving the epidural injections is not to determine the presence or absence of arsenic in the spinal fluid but to influence the epidural conditions which are most likely responsible for the tabetic changes; the drug injected is neoarsphenamine, in doses as large as those used for intravenous injections and considerably larger than those used in any of the so-called intraspinal methods (Swift-Ellis, Gennerich, Schubert and others) discusssed elsewhere.[5]

For the anatomophysiologic facts pertaining to epidural injections, such as the highest level the fluids injected may reach, the contributions by Läwen[6] and Heile,[7] and especially Cathelin[8] should be consulted.

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THE STATUS OF GALLBLADDER SURGERY

BASED ON A STUDY OF FOURTEEN THOUSAND SPECIMENS

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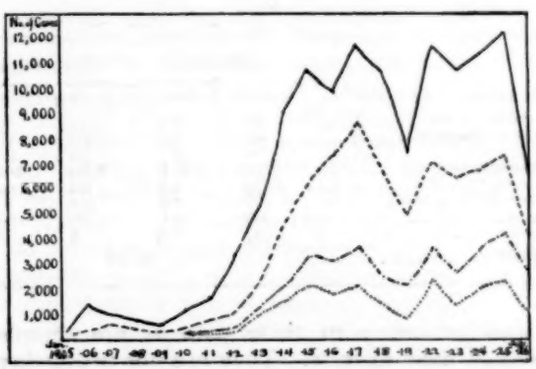
There is probably no better way of determining the present status of gallbladder surgery than that afforded by studies of large series of operatively removed specimens. This study of more than 14,000 gallbladders has an unusual value in that it embraces the experience of essentially the same surgeons during a period of twenty years. Necropsy specimens from 1,647 cases are included for comparative studies.

During the last thirty years, the surgical treatment of gallbladder disease has varied greatly. Cholecystostomy formerly comprised more than half of the gallbladder operations; today it comprises less than 5 per cent in most of the clinics in America. Cholecystectomy has become the almost routine procedure, yet it is interesting that the indications for cholecystectomy have not changed much during this period. This fact is evident in the literature and is substantiated in this study of 12,499 operatively removed gallbladders.

While preparing the Mayo Clinic gallbladder exhibit for the annual session of the American Medical Association in 1924,[1] I was impressed by the constant proportions of the various gallbladder diseases which required cholecystectomy. It had seemed to me that the indications for cholecystectomy had varied during even a five year period. If the types of disease were the criteria for gallbladder excision, then certainly I had been in error; for the percentages of excision for acute, subacute and chronic cholecystitis, cholesterosis, cholelithiasis and carcinoma had remained almost the same over the twenty year period studied, as shown in the accompanying chart. It is evident from this chart that the various gallbladder diseases requiring cholecystectomy remained proportionately the same during this period.

The number of cases in which cholecystostomy was performed varied markedly. In 1906, 55.7 per cent of the gallbladder operations at the Mayo Clinic were cholecystostomies; in 1926, only 4.3 per cent. Obviously, cholecystostomy had not been a satisfactory procedure. Failure occurred because the focus of infection had not been removed and therefore infection continued to spread to adjacent organs by way of the lymphatics; stones often reformed because the requisites for stone formation had not been eliminated. As soon as the pathology of the gallbladder was better understood, surgeons changed their operative methods and cholecystostomy was less frequently performed.

As it seems impossible with our present facilities to determine accurately the type of pathologic change in the gallbladder before operation, it seems especially significant that the proportions of the various gallbladder diseases requiring cholecystectomy have remained almost constant. Clinicians accurately identify a diseased gallbladder in about 85 per cent of the cases but are unable to establish the type of pathologic change with much success. In our recent study of 1,000 cases of cholesterosis of the gallbladder, stones were diagnosed in 24 per cent of the stone-free cases and overlooked in 45 per cent of those with stone. Even the roentgenologist has difficulty in diagnosing the simplest gallbladder problem, for in our series of cases of cholesterosis, he overlooked stones in 40 per cent of the cases in which they were present and diagnosed them with the Graham-Cole technic in 9 per cent when they were absent at operation. With plain plate roentgenography the error is still greater, for only about 20 per cent of gallstones cast a shadow.



Cholecystectomies at the Mayo Clinic from January, 1906, to July, 1926: and dashes, cholesterosis with stones; dotted line, cholesterosis without solid line, total number of cases; broken line, cholelithiasis; line of dots stones.

The surgeon, however, is not especially interested in the refinements of pathologic diagnosis. He is called on to determine when a diseased gallbladder should be subjected to operative therapy. The decision is often difficult, and in the majority of cases surgery will be optional. At the Mayo Clinic, surgery is rarely urged on the patient. The situation is explained to him, and he is allowed to decide whether his symptoms are severe enough to warrant operative aid or not. Under these

4. Schönfeld, W.: Der epidurale Raum in seinen Beziehungen zum Liquor, Ztschr. f. d. ges. Neurol. u. Psychiat. **104**: 280, 1926.
5. Hassin, G. B.: The Intraspinal Arsenic Treatment of Syphilis, J. A. M. A. **65**: 2078 (Dec. 11) 1915.
6. Läwen, A.: Die Extradural Anaesthesie, Ergebn. d. Chir. u. Orthop. **5**: 39, 1913.
7. Heile, B.: Der epidurale Raum, Arch. f. klin. Chir. **101**: 845, 1913.
8. Cathelin, F.: Les injections epidurales par ponction du canal sacré, Thèse de Paris, 1902.

1. Mr. Judah and Dr. Mentzer won the gold medal for this exhibit at the Chicago session in 1924, and honorable mention at Atlantic City in 1925.

circumstances, the accompanying chart is particularly significant, for if patients elect surgery on the basis of the severity of their symptoms, then the value of the parallelism in the graphs is increased.

It is common experience to find minor grades of disease producing more severe symptoms than major pathologic changes. This is especially true in diseases of the gallbladder, patients often carrying large stones for years without much distress, whereas others require morphine for the relief of pain due to a mild cholecystitis without stones. Obviously, it is not the degree of pathologic change that produces symptoms or warrants surgical aid. Since this is true, the data contained in the chart seem even more significant.

For this study I examined 12,499 surgical specimens and compared them with 1,647 consecutive gallbladders seen at necropsy. There were 573 cases of subacute cholecystitis in the surgical group, 167 of acute pericholecystitis, 335 of acute purulent cholecystitis and 11,424 of chronic cholecystitis, as summarized in the accompanying table. There were fifty-two cases of primary carcinoma of the gallbladder, but only a few of these specimens are included in this study. Twenty-two specimens which the pathologist called "normal" had been removed. Many gallbladders are removed which, to eyes other than the pathologist's, appear normal, and yet many of these patients are completely relieved of their distress. They are not neurasthenics, for this element in their history has been carefully excluded. The problem in these cases is unsolved. We do not know the mechanism of pain in these instances, nor do we know why these patients are relieved of their distress, after cholecystectomy. Excision of the normal appearing gallbladder is justifiable, however, only when pain has been a dominating feature in the patient's gallbladder distress.

Pathologic Changes in Cholecystectomy Specimens

Pathologic Condition	With Stones		Without Stones	
	Number	Percentage	Number	Percentage
Acute cholecystitis	270	2.1	64	0.51
Subacute cholecystitis	451	3.6	112	0.9
Pericholecystitis	98	0.7	69	0.52
Chronic cholecystitis	5,016	40.1	3,294	26.5
Cholesterosis (diffuse)	1,158	9.2	773	6.1
Cholesterosis (localized)	570	4.5	241	1.1
Empyema	270	2.1	61	0.51
Carcinoma	47	0.37	5	0.04
Total cases	12,499			

SURGICAL PROCEDURES

Acute Cholecystitis.—The acute condition of the gallbladder in early cholecystitis is subject to two very different surgical procedures. It was formerly considered advisable to operate on the acutely diseased gallbladder as an emergency measure. The mortality was high. For this reason there has been a recent tendency toward conservatism. Less than 1 per cent of the surgical specimens in our series showed acute cholecystitis.

An acute cholecystitis is a potential catastrophe, for it is impossible to know how general or localized the infection may be. If the infection is definitely localized in the gallbladder wall without involving the adjacent lymphatics, liver or pancreas, immediate cholecystectomy is advisable. Unfortunately, such localization is rarely found. Acute cholecystitis, when it can be recognized as such, invariably involves adjacent structures. The manipulation necessary in operative removal spreads the inflammatory process further. Results justify conservative treatment. Bed rest with ice packs over the gallbladder area often aids in the localization and subsidence of the inflammatory lesion. If the fever, pain, local rigidity and leukocyte count do not decrease after a few hours, surgical intervention is necessary.

Acute Empyema.—An acute empyema of the gallbladder is likewise often a trying condition, for delay may mean rupture with its attendant high mortality. The procedure must necessarily be governed by the case itself. It is sometimes possible to permit an acute empyema to subside, so that surgery may be more safely undertaken a few hours or even days later. The differential diagnosis is most important, however, for confusion of this lesion with gangrene or torsion of the gallbladder is most serious.

As a general rule, conservative measures are indicated in acute gallbladder lesions, provided the patient is under constant observation. When radical treatment is necessary, it should be as conservative as possible. Cholecystostomy is the operation of choice, as it permits the least operative manipulation and yields certain external drainage.

Acute gallstone colic is not, of course, a surgical condition. Unfortunately, it is not always recognized. Many such patients are sent to the hospital for a hasty cholecystostomy. Likewise, I have seen a gangrenous gallbladder and an acute empyema of the gallbladder treated as stone colic. Procrastination and the administration of narcotics may be fatal in such cases. Diagnostic errors of this sort can scarcely be made if careful clinical examinations and laboratory data are available.

Cholesterosis.—This is one of the most interesting of the gallbladder diseases. Its diagnosis is as baffling to the clinician as its treatment is to the surgeon. In some patients it is the sole lesion causing severe upper abdominal distress, and in others it remains for years without causing any disturbance.

It is a relatively common disease, being present in 37 per cent of the gallbladders seen at necropsy and in 22 per cent of the surgical specimens. Stones accompanied the lesion in less than half of the surgical cases and in about a third of the gallbladders examined post mortem, as shown in the table.

Cholecystectomy had been performed in all the 2,742 cases of cholesterosis. Cholecystostomy has been tried in this disease without satisfactory results, for the patients have rarely been relieved of their distress. W. J. Mayo has reoperated in several of his own cases, and in no instance did he note a disappearance of the grossly visible lipoid in the gallbladder mucosa even after prolonged surgical drainage.

Surgery is not indicated in all cases of cholesterosis of the gallbladder. In some instances, at least, an early cholesterosis has remained for years without progression in the gross picture of the disease. The Graham-Cole roentgenograms have proved that the gallbladder mucosa is capable of concentrating the dye "normally" in mild and occasionally even in advanced stages of this disease. Obviously, then, this lesion is not, per se, an indication for operative therapy. Judd has shown that only those patients presenting the classic syndrome of gallbladder disease with pain as a dominant symptom are satisfactorily relieved by surgery.

In this disease the gallbladder is apparently only an indicator of a generalized metabolic fat disturbance in the body. Lipoids accumulate in the gallbladder wall either as a result of local disturbance or because of the increased cholesterol content of the body generally.

Henderson has shown a suggestive increase in the cholesterol content of the suprarenals also in this disease, and many workers have found increased lipoids in the blood serum. I have compared the blood cholesterol content of more than 200 patients with cholesterosis of the gallbladder and have found an appreciable increase over the "normal" in almost every case. Numerous samples of blood must be taken from the patient over a long period of time; single samples are of no value and may be misleading. Obviously, the removal of the gallbladder could not cure the patient of his fundamental ill. Yet patients in whom cholesterosis is found at operation are often completely relieved of their distress by cholecystectomy. This is especially true if pain has been a prominent feature in their disturbance. During the twenty year period covered by this report there has not been any proportional increase or decrease in the number of cholesterin-laden gallbladders excised at the Mayo Clinic. This fact is pertinent when it is remembered that cholesterosis of the gallbladder is scarcely ever diagnosed before operation.

Gallstones are not a significant accompaniment of this disease, as Judd and I have shown. The clinical picture is not essentially modified by their presence. This fact was established in our previous papers, and the present study affirms that observation. After the gallbladder had been excised, stones were found in only about 60 per cent of the specimens. Furthermore, there has not been any increase in the proportion of cases showing calculi in this disease. If surgeons had noted that cholecystectomy gave better results in cases of cholesterosis with stones than in those without stones there would have been some proportional increase in the cases of cholesterosis with stone, particularly since this study embraces the experience of essentially the same surgeons over the same period of time.

Of 1,647 consecutive patients examined at necropsy, 37 per cent had cholesterosis of the gallbladder. Gallstones accompanied the lesion in 20 per cent of the cases. Gallbladder disease was not anticipated in most of these patients, for in 87 per cent of them the history of gastro-intestinal disease had been negative. Thereby it would seem that cholesterosis of the gallbladder may be an insignificant disease in many cases affecting a large percentage of the adult population unbeknown to them. On the other hand, it is known that this seemingly simple lesion apparently causes severe pain and much gastro-intestinal distress in many patients, and that cholecystectomy completely relieves the trouble. The significant features in this study, it seems to me, are that surgeons recognize this lesion at the operating table but are unable to anticipate it before surgery is undertaken, and that cholecystectomy gives complete relief in selected cases. Therefore "surgical gallbladder cases" receive the benefit of operative therapy; the proportion of cholesterol-laden gallbladders found in this group has not varied during the twenty years covered by this study.

Chronic Cholecystitis.—In chronic abdominal disease the gallbladder, unfortunately, is often the surgical target. I am afraid that the slightly diseased gallbladder is too frequently tampered with. The surgeon is often satisfied with minor grades of inflammatory change in the specimen. The pathologist can invariably find enough evidence to justify a diagnosis of "chronic cholecystitis." The justification lies not in the degree of inflammatory change found in the specimen after removal but rather in the degree of distress suffered by the patient before surgery. It is true that cholecystectomy sometimes gives relief in the lesser inflammatory lesions of the gallbladder, but these relatively few cases do not justify the removal of all "chronically infected gallbladders." It must not be forgotten that from the pathologist's point of view the majority of adults have a "chronically infected gallbladder."

The indications for cholecystectomy in chronic cholecystitis are variable. The textbook picture of the disease is fairly definite, and when all the symptoms are present surgical aid is warranted. When only a portion of the picture is present, and this is usually the case, the procedure is more uncertain. I believe that every patient in whom a diagnosis of chronic cholecystitis can be made should be given the benefit of medical therapy; if relief is not obtained, then surgery may properly be considered.

Cholelithiasis.—Gallstones are not, per se, an indication for surgery. It is surprising what a large percentage of the adult population carry gallstones throughout life without suffering much distress. In a recent necropsy study at the Mayo Clinic, I found that 21 per cent of 612 consecutive patients had gallstones; less than half of these had been operated on at some time or other for gallbladder disease. Obviously, the presence of stones is not, in itself, justification for surgical intervention. Clinical symptoms and not pathologic changes must be the basis for surgical aid. It is true that the gallbladder containing stones probably becomes secondarily infected sooner or later if the stones are not primarily of infectious origin. The gallbladder thereby becomes a focus from which infection may spread to neighboring structures, notably the liver. As such, it may be removed. However, I believe that an inflammatory gallbladder that is spreading its infection to adjacent organs will present clinical evidence of that dispersement by an exacerbation of the symptoms. It is known that a noninflammatory gallbladder, though filled with stones, may remain for years without producing appreciable symptoms. Moreover, many cases of "silent stones" have occurred in chronic cholecystitis in which the infection lies quiescent and the gallbladder wall is bacteriologically negative on culture. It is not the presence of stones or even of low grades of infection that persuade the surgeon to operate, but rather the symptoms produced by these pathologic changes. In many cases these changes may be present without producing any symptoms. These patients may pass through the span of their life without suffering sufficiently from their stones or from cholecystitis to warrant operative removal. I believe that most of these patients escape appreciable injury to other organs. They may have a few more lymphocytes or even polymorphonuclear leukocytes in the liver than the "normal," but I do not believe that these minor changes warrant cholecystectomy. Cholecystectomy may prevent progressive hepatic disease but I am sure that if the inflammatory progression is marked, clinical symptoms will appear demanding surgical intervention.

The cholesterin-rich stones, in particular, lie dormant for years without giving much evidence of their presence. These stones are probably solely of metabolic origin. They are usually related to a pregnancy, to obesity or to some other generalized metabolic fat disturbance in the body. As secondary infections set in, bile pigments are deposited in these stones, darkening them and producing the familiar pigmented "common stone." It is at this time that the stones are especially apt to produce symptoms. In reality, I believe that the

inflammatory changes in the gallbladder wall produce the symptoms. If this is so, it seems to me that patients should be allowed to carry their stones until definite symptoms arise. Cholecystectomy may be considered then for the relief of distress or for the removal of the infectious focus.

One small stone frequently causes more distress than multiple stones, even when the latter occur in a gallbladder filled with old pus and detritus. The gallbladder in the latter instance is insensitive because of advanced fibrosis and the destruction of the delicate mucosa and rugae.

When surgery is indicated, cholecystectomy is the operation of choice. Cholecystostomy is advisable in debilitated patients, occasionally, and when cholecystectomy is especially difficult. Cholecystostomy should be considered in cholelithiasis when the common duct has been injured by cholangeitis or the passage of stones. Strictures of the common duct are not easily treated, for plastic operations on the duct are not highly successful even in the best hands. Therefore it is advisable to save the gallbladder for possible later anastomosis to the stomach or duodenum, as this may be the only means of bridging an obliteration produced by stenosis of the common duct.

The gallbladder, though filled with stones, should be saved, if possible, in cases of advanced cirrhosis of the liver, for it may be needed for adequate drainage of bile. The stones may be removed, and a large-mouthed cholecystoduodenostomy made. Pancreatitis and carcinoma of the pancreas likewise warrant the preservation of the gallbladder because of common duct obstruction.

Intrahepatic cholelithiasis also indicates the preservation of the gallbladder whenever possible, for in this condition stones pass down the hepatic and common ducts repeatedly. They frequently injure the ducts and sometimes lodge to produce obstruction. Operative removal of the stones is often necessary, and occasionally the ducts are so badly injured by repeated trauma that plastic repairs are no longer possible. The gallbladder may be used in some cases to bridge the common duct by suturing it to the duodenum. The risk in this operation is less than that following the operation of last resort; namely, anastomosis of the duodenum to the under surface of the liver.

SUMMARY

1. In this study, 12,499 surgical and 1,647 necropsy gallbladders were examined.

2. Three per cent of the surgical specimens showed acute cholecystitis; 1.3 per cent pericholecystitis; 4.5 per cent subacute cholecystitis, and 91.4 per cent chronic cholecystitis.

3. Gallstones were present in 57 per cent of the surgical cases and in 20 per cent of the necropsy specimens.

4. Cholesterosis occurred in 22 per cent of the surgical and in 37 per cent of the necropsy specimens; half of the former and about a third of the latter also contained stones.

5. Acute empyema of the gallbladder was present in 2.6 per cent of the surgical cases.

6. During the twenty year period covered by this study, the yearly incidence of these lesions in surgical specimens remained essentially the same.

7. At the Mayo Clinic, cholecystostomy comprised 55.7 per cent of the gallbladder operations in 1906, and only 4.3 per cent in 1926.

CONCLUSIONS

1. Gallbladder surgery is fairly well stabilized at present.

2. Cholecystectomy comprises about 90 per cent of the gallbladder operations today.

3. Surgery in gallbladder disease should be based on the clinical symptoms rather than the local pathologic changes.

4. There are definite indications for saving the gallbladder whenever possible, especially in obstructions of the common duct and certain liver and pancreatic diseases.

516 Sutter Street.

Clinical Notes, Suggestions and New Instruments

A CASE OF INSULIN EDEMA

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Although I am certain that edema develops frequently in diabetic patients treated with insulin, very few cases have been reported in the literature. I therefore am reporting the following case:

I. F., a man, aged 41, a mechanical dentist, seen by me on the afternoon of June 15, 1927, complained of dryness of the mouth and throat, thirst, polyuria, loss of weight, marked weakness and chilliness, all of only one week's duration. The previous medical and surgical history was negative. There was no history of venereal diseases.

On physical examination it was observed that the patient was emaciated and pale, well oriented, and not dyspneic. There was a marked odor of acetone to the breath. The head and scalp were normal. The pupils were equal and regular and reacted to light and in accommodation; ocular movements were normal. The nose was normal. Pyorrhea was marked; there were many decayed teeth. The tongue was very dry. The throat was dry but otherwise normal. The neck was normal. The lungs, heart and abdomen were normal. There was no edema of the extremities. The knee jerks were normal. The skin, glands and genitalia were normal. The weight was 125 pounds (56.7 Kg.). The blood pressure was 130 systolic and 90 diastolic. The rectal temperature was 98.2 F.; the pulse, 74. The urine was colorless, clear and acid, and the specific gravity was 1.030. There was no albumin. Dextrose was four plus. There were large amounts of acetone, diacetic acid and beta-oxybutyric acids present; microscopic examination was negative. The chemical examination of the blood showed 422 mg. of sugar, 14.5 mg. of urea and 1.5 mg. of creatinine to each hundred cubic centimeters of blood.

The patient was ordered to bed and was given hot black coffee, tea and orange juice several times during the first day. Saline enemas were administered, and hot water bags were applied to the feet and body. Twenty-five units of insulin was given the first day. The next day, June 16, the patient already felt much better, and was given 30 units of insulin. June 17, 18, 19 and 20, he received 30 units of insulin daily but continued to have four plus dextrose in the urine and high blood dextrose, although he felt much better. His weight had already climbed to 141 pounds (64 Kg.). He was receiving a diet containing 750 calories at this time. No edema was visible. The carbohydrate in the diet was increased in greater proportion than was the protein or fat. June 21, 22 and 23, the patient received 50 units of insulin daily; on the 22d, pitting edema of the legs was first observed. The patient felt so well now that he insisted on going back to work but was not permitted to do so. The urine for the first time on the 24th contained no acetone, diacetic or beta-oxybutyric acids, and only a trace of dextrose. On the 25th, his weight was 151 pounds (68.5 Kg.) and there was definite

edema of the lower extremities. The fluid intake was very slightly reduced but the salt intake was markedly reduced. Within ten days his weight came down to 139 pounds (63 Kg.) although his diet was gradually increased, and 40 units of insulin was being given daily. He has remained sugar free, feeling well and weighing between 137 and 140 pounds (62 and 63.5 Kg.). The edema is gone.

The patient gained 26 pounds (12 Kg.) in ten days, all as the result of the retention of water, and lost 12 pounds (5.4 Kg.) with disappearance of the edema in the same length of time with practically the same insulin dosage but reduction in the salt intake. The exact nature of this phenomenon is not clear. Some observers believe that salt restriction fails to relieve the edema in these cases, but von Noorden and Isaac* maintain that salt restriction will help to reduce this type of edema. The edema is not due to impaired renal capacity. In this case no albumin was found in the urine, and the renal function so far as nitrogenous excretion is concerned was normal. Some believe that insulin edema is a colloidal phenomenon; that insulin increases the hydration capacity of the tissue colloids of the body. Two and five-tenths grams of water can be retained by each gram of glycogen stored both in the muscles and in the liver. The more severe the case of diabetes, the more apt is the edema to appear. Great retention of fluid may result from the sudden reduction of the larger quantities of sugar in the blood.

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TRICHINOSIS WITH INVOLVEMENT OF THE CENTRAL NERVOUS SYSTEM

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A case of trichinosis with involvement of the central nervous system is reported here as another clinical contribution to the literature of trichinosis encephalitis. That this form of encephalitis eixsts as a clinical entity was demonstrated by Frothingham[1] in 1906 and by Hassin[2] in a pathologic report in 1926. The older writers[3] speak of rigidity of the neck, Kernig's sign, the paraplegias, singultus and trismus as occurring in trichinosis. These signs, however, can be explained by local irritation in the muscles due to the presence of the trichinae, and not as necessarily due to involvement of the menginges or central nervous system.

In reviewing the literature on trichinosis, if the review is limited to the cases presenting neurologic manifestations, one finds that very little has been written on the subject. Even the discovery of the trichinae in the spinal fluid by Lintz and VanCott[4] in 1913, in the absence of accompanying neurologic symptoms, did not help to enrich the literature of cases of trichinosis in which the central nervous system was affected.

Jacob Meyer[5] reports three cases of trichinosis in one family which simulated epidemic meningitis and in which the spinal fluid showed a pleocytosis of from 40 to 240 cells.

In Sterling's[6] report of two cases of trichinosis in which he observed evidence of involvement of the central nervous system, he argues that the trichinae may and do involve the central nervous system in the manner of other familiar parasites. In the first case, in a woman, aged 21, fourteen days after the onset of the disease, there developed a hemiplegia, disturbances of the tactile, pain and deep muscle sense on the right side, and a motor aphasia. In the second case, in a physician, aged 56, the disease was accompanied by unconsciousness and loss of bladder and rectal control. Twelve days later consciousness returned, but a marked paresis of the left lower extremity and a mild paresis of the left upper extremity were observed. Nine years afterward the patient still presented evidence of paresis on the left side. Sterling concludes that the trichinae cause inflammation of blood vessels, thrombosis, or a meningo-encephalitis by invading the central nervous system.

The report of our case can be added to those already quoted in an effort to clear up a very important problem, namely, that of the mode of entrance of the trichinae into the brain and spinal cord. It was originally thought that the trichinae travel into the various tissues, and especially into the muscles by active migration. Askanazy[7] maintains that this migration is not an active but a passive process. He shows that trichinae are born not in the lumen of the intestines but in their mucous membranes, where the females deposit their eggs. Thence the embryos pass into the lymphatics and are carried through the thoracic duct to the heart, blood vessels and capillaries of the muscles. They break through these capillaries and land in the muscle fibers, where they become encapsulated. In our case trichinae were found in the blood (Dr. W. C. Thro), spinal fluid and muscles, which lead us to think that they travel into the various tissues by way of the blood and lymph channels.

REPORT OF CASE

A. H., a girl, aged 16 years, born in this country, was admitted to St. Mark's Hospital, Sept. 16, 1927, because of inability to extend the elbows, pain in the lower extremities, pain in the back, and edema of the face. The family and past histories were entirely negative.

Six days before admission to the hospital the patient noticed that her face was somewhat swollen and that she had a mild frontal headache. She went in bathing and developed severe abdominal pains, chiefly in the region of the appendix. On the following day she felt very tired, complained of pain in both lower extremities, and had a temperature of 102.6 F. The day before her admission to the hospital she was unable to extend the forearms, and the pain in the legs was so severe as to prevent her from walking. At no time was there any vomiting. Questioning of the patient in the hospital elicited the information that she had eaten raw pork.

The patient was well developed and appeared acutely ill. Her head was held stiffly; the upper extremities were in flexion, and there was an eversion of the left lower extremity. The pupils were equal and reacted well to light and in accommodation. The optic disks were congested and the margins blurred, the right more than the left. There was a weakness of the left external rectus muscle, and a right facial weakness, central in type. All other cranial nerves were normal. The patient also showed rigidity of the neck muscles and trismus. The heart and lungs were normal. The abdominal reflexes could not be obtained, and all the deep reflexes were exaggerated. There was a bilateral Babinski sign with confirmatory reflexes, which were more marked in the right leg.

The highest temperature was 102 F., which dropped to normal within three weeks. The respiration ranged between 20 and 30 a minute; the pulse rate, between 80 and 110. The blood picture on admission showed a mild anemia, a slight leukocytosis and a marked eosinophilia, all of which returned to normal within three weeks. The spinal fluid was under great pressure, and on analysis showed an absence of cells, a faint trace of globulin, and a slight increase in sugar. The Wassermann reaction of the spinal fluid was negative, and numerous trichinae larvae were found. Examination of the blood and of a section of the deltoid muscle also showed the presence of trichina larvae.

Twenty-three days after admission the trichina larvae disappeared from the spinal fluid.

At the time of her discharge from the hospital, three weeks later, the patient had recovered completely both objectively and subjectively, except for slight pains in both the upper and the lower extremities.

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* Von Noorden and Isaac: Die Zuckerkrankheit, ed. 8, Berlin, Julius Springer, 1927, p. 535.

1. Frothingham, Channing, Jr.: A Contribution to the Knowledge of the Lesions Caused by Trichina Spiralis in Man, J. M. Research **15**: 483-490, 1906.

2. Hassin, G. B., and Diamond, I. B.: Trichinosis Encephalitis, Arch. Neurol. & Psychiat. **35**: 34-47 (Jan.) 1926.

3. Glazier, W. C. R.: United States Marine Hospital Service, Report on Trichinae and Trichinosis, Treasury Department Document 84, Marine Hospital, Washington Government Printing Office, 1881.

4. Van Cott, J. M., and Lintz, William: Trichinosis, J. A. M. A. **62**: 680 (Feb. 28) 1914.

5. Meyer, Jacob: Trichinosis: A Report of Three Cases Simulating Meningitis with Finding of Trichinae in the Spinal Fluid, J. A. M. A. **70**: 588 (March 2) 1918.

6. Sterling, W.: Les troubles nerveux de la trichinose, Rev. neurol. **1**: 435-439 (April) 1925.

7. Askanazy, M.: Zur Lehre von der Trichinosis, Virchows Arch. f. path. Anat. **141**: 42, 1895.

Council on Physical Therapy

THE FOLLOWING ARTICLE HAS BEEN APPROVED BY THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION.
H. J. HOLMQUEST, SECRETARY.

ROENTGEN-RAY DIAGNOSIS

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NEW YORK

(Concluded from page 545)

GASTRO-INTESTINAL TRACT

Following the example set by the American physiologist Cannon, the Munich physician Rieder added a bismuth salt to some pap or gruel and fed the patients this opaque mixture in order to visualize by filling the otherwise transparent stomach and intestines. Eliminating the various bismuth combinations because of their toxicity roentgenologists now use the chemically pure barium sulphate, the emphasis being on the "chemically pure." Failure to take this precaution by the careless or inexperienced has resulted in the death of several patients.

The esophagus, stomach and small intestines are best studied by the barium meal, the opaque substance being administered in one of several vehicles, such as plain water, in which it does not dissolve, in buttermilk, zoolak, malted milk, one of the various cereals, or potato starch. Inventive persons have produced biscuits, gelatins and all sorts of concoctions, either to make the barium more palatable or to relieve the roentgenologist and his assistants from the drudgery of preparing the meal. Suffice it to say that the vast majority of roentgenologists do not take kindly to any of these.

The colon is best studied by the barium enema but may also be examined by the meal. The latter is contraindicated when there is evidence indicative, or suggestive, of even partial obstruction. The barium may harden like brick and may block a small passage. The enema is contraindicated when there is marked bleeding from the bowel, the possibility of perforation, and shortly after operations on the intestine, especially when there have been resections or anastomosis. A suture may give even when no force is used to administer the enema, and peritonitis may result.

Esophagus.—In the esophagus practically all lesions, except shallow ulceration of early carcinoma, can be discovered by the roentgen ray. Carcinoma, which may occur in any portion of the esophagus, is most frequent at the cardia or lower third, less so near the aortic arch. It is generally recognized by the irregular outline of the constriction and the rather insignificant dilatation above it.

Cardiospasm, on the other hand, has a smooth appearance, and the esophagus is enormously dilated, sometimes casting a shadow in the chest even without barium and simulating a mediastinal neoplasm. A barium mixture will help identify it. But even the smaller ones are very much dilated and tortuous.

Diverticula generally occur in the upper part of the esophagus, very rarely at the cardia. Fluoroscopically one can sometimes observe the filling of the diverticulum until it spills over into the normal lumen. Often the diverticula cause obstruction by pressure on the normal lumen. Pressure on the esophagus may also be caused by aneurysms, mediastinal tumors and other extrinsic lesions.

Benign strictures are sometimes encountered; they are generally caused by the swallowing of a corrosive. Metallic foreign bodies are easily recognized; nonmetallic, such as fish bones, even beef or chicken bones, and vegetable or fruit seeds as a rule cannot be seen. Occasionally an opaque mixture may help to localize the offender without identifying it.

Stomach.—In the stomach, ulcer and carcinoma are most frequent, syphilis less so, and other neoplasms, such as lymphosarcoma, are rare.

Ulcer is generally characterized by a projection or niche or a flat defect on the lesser curvature; often it is accompanied by an hour-glass constriction on the greater curvature opposite. Unless there is a niche, it is not easily recognized. If the flat ulcer is large and the patient is in the cancerous age, neoplasm should be thought of.

Carcinoma generally occurs on the greater curvature; less frequently it is found on the lesser curvature just below the cardia, but it may involve the entire gastric wall. It appears as a defect in the gastric contour and may be shallow or deep, of smaller or greater extent. Peristaltic waves are arrested at the proximal end and can often be seen to continue beyond the distal end of the lesion. Sometimes the neoplasm may reach such size as to block the pylorus and cause partial or total obstruction; at other times the growth may cause an abnormal patency of the pylorus, allowing the food to pour through it into the small intestines, resulting in exceedingly rapid emptying.

There is no characteristic roentgen-ray picture of any type of neoplasm. All neoplasms appear as defects in contour. Those on the lesser curvature can often not be differentiated from ulcers.

Syphilis of the stomach also does not have distinguishing features. It simulates ulcers or neoplasms. In one case the syphilitic stomach resembled another which had been corroded by lye; without the history, an etiologic diagnosis could not have been made in either case.

Duodenum.—In the duodenum the most frequent lesion is ulcer of the first portion, the bulb. To Cole of New York belongs the credit for having called attention to the presence of a persistent deformity in the case of duodenal ulcer. Carcinoma of the bulb is rare. It cannot be differentiated from ulcer and is generally diagnosed on the operating table and more frequently by the microscopist.

Of late ulcers and carcinomas of other parts of the small intestine have been diagnosed with increasing frequency. The former are more easily recognized the nearer they are to the stomach, especially if they show a niche; the latter generally show more or less marked constrictions with dilatation of the loops proximal to them. But one should remember that not all constrictions are due to carcinoma; some may be caused by adhesions resulting from inflammation or surgical procedures. A knowledge of the history of the case is important.

Colon.—In the colon ulcerative colitis, diverticula, neoplasms or adhesions can as a rule be recognized. In ulcerative colitis there is absence of haustration when the colon is filled by an opaque enema, and there is a cylindric barium outline of the colon after the enema has been expelled. Diverticula appear as more or less numerous small circular shadows scattered throughout the entire colon after its lumen is empty of the barium ingested or injected. They are most frequent in the sigmoid. Neoplasms manifest themselves by filling

defects and constrictions; the latter may also result from adhesions.

One thing must be borne in mind: that lesions of the colon occurring in the lower sigmoid, unless they are obstructive, may be overlooked. They are often hidden by the filling of the rest of the sigmoid. Various devices are resorted to, among others placing the patient in the Trendelenburg position. They sometimes help.

In making gastro-intestinal examinations it is important to combine fluoroscopy with roentgenograms. Palpation while screening will often eliminate an apparent constriction or filling defect. Duodenal bulbs may not show up on a large number of films, but may be discovered very quickly by fluoroscopic manipulation.

Gallbladder.—The gallbladder was the great bone of contention between two camps of roentgenologists, those who claimed ability to demonstrate the gallbladder and stones when present in almost every patient, and those who maintained that gallstones could be demonstrated only when they contain the necessary quantity of calcium salts and that a gallbladder, if and when demonstrated, did not necessarily mean a pathologic one. The discussion went on fast and furious until about three years ago, when Graham of St. Louis and his co-workers announced the successful result of their painstaking search for a chemical that has a selective action on the liver and from there is excreted into the gallbladder. A few of the roentgenologists who previously claimed the ability to demonstrate gallstones and the pathologic gallbladder in 100 per cent of the cases still belittle the value of the Graham test. But their number is rapidly diminishing. One of the things that the Graham test has settled above all is that the so-called gallbladder shadows that appear on films when no dye was given are, more often than not, something else. In many cases where the actual gallbladder shadow was demonstrated by the dye another pyriform density can be seen which in the pre-Graham days might have been called a gallbladder. As long as the dye was administered intravenously the method was applied sparingly, but now since the oral administration of tetraiodophenolphthalein has proved successful, no suspected gallbladder need go unexplored.

This method demonstrates the size, shape, contour and position of the gallbladder, and whether there are constrictions, kinks or other deformities. Normal emptying and filling time can be studied. The presence of radiotransparent gallstones can be shown by areas of transparency within the opaque gallbladder shadows. Opaque gallstones can be more certainly localized in the gallbladder, and sometimes additional transparent stones are revealed.

A word of caution: Transparencies may not be due to gallstones, but to gas in the overlapping intestines, and deformities may be due to the position of the patient and not to adhesions. Experience alone enables one to make the differentiation. Nonfilling of the gallbladder with dye means a pathologic condition in a large percentage of the cases in which it occurs. At least two attempts to fill it should be made before a definite pathologic diagnosis is made.

URINARY TRACT

In the urinary tract the roentgen ray not only enables one to demonstrate the size, shape and position of the kidneys, but also the presence, shape, size, number and location of calculi. It also enables one to follow the descent of the calculus. With the aid of opaque catheters it is possible to identify concretions as urinary calculi or extra-urinary bodies, and with opaque solutions injected into renal pelvis and calices, into the ureter or into the bladder, they assist one in demonstrating radiotransparent calculi, hydronephrosis or pyonephrosis, polycystic, horseshoe or fused kidney, tumors, malformations of kidney, perinephric abscess, kinks, dilatations (hydro-ureter), constrictions, and diverticula or other lesions of the ureter, including double ureters and renal pelves. Injection of opaque solutions, occasionally of air, into the bladder will help demonstrate enlargement of the prostate, tumor of the bladder wall, or diverticula.

Dependable roentgenograms of the urinary tract must include the last two or three ribs, the entire width of the abdomen and pelvis, and an area at least 1 inch below the inferior border of the symphysis pubis. Both ischial tuberosities should also be seen. Its quality must be such as to demonstrate clearly both kidneys (sometimes gas in the colon may obscure one or both), the edges of the psoas muscles, and the transverse processes of the lumbar vertebrae.

The demonstrability of the calculus depends on its chemical composition. Calculi containing calcium, and the cystine stones show very clearly, the pure urates not at all. Fortunately the latter occur most frequently in the bladder (about 60 per cent), where they can be diagnosed by the cystoscope, less frequently in the ureters (about 10 or 12 per cent), and very rarely in the kidney (about 5 per cent).

When interpreting the roentgenograms, one must bear in mind that substances other than urinary calculi may cast suspicious shadows which should not be mistaken for calculi. Of such extra-urinary shadows reported in the literature, the following are perhaps the most frequent: phleboliths; barium residue in the appendix or other parts of the gastro-intestinal tract; foreign bodies; gallstones, especially when solitary; calcified mesenteric glands, which, as a rule, are reticulated and can thus be differentiated from calculi; calcifications in tuberculous or carcinomatous kidneys; inspissated pus; calcification of the tip of the transverse process of one of the lumbar vertebrae; compact islands in the sacrum or ilium; sclerosis of the iliac arteries; calcifications in a myoma, and dermoid cyst. These require considerable experience in reading roentgenograms for differentiation from calculi.

The body surface of the patient, especially the back, ought to be carefully inspected at the time of the examination, so as to avoid mistaking for calculi the following, which often cast dense shadows: warts and pigmented moles; scabs on a wound, especially when some metallic paste has been applied to it; scars of former operations, and adhesive plaster, especially when folded. Intestinal contents can be eliminated by a reexamination after more thorough catharsis and the cessation of metallic medication.

A new source of error which will plague the roentgenologist in the near future is the iodized oil introduced into the fallopian tubes, where it apparently will remain forever. Cases have been seen in which it remained for many months.

THORACIC VISCERA

In the thoracic viscera a combination of fluoroscopy and roentgenography will produce the best results. In cardiovascular diseases the former gives more valuable information; in diseases of the lungs, especially early tuberculosis, the film is superior, for it

reveals fine detail in the lung picture that cannot be observed on the screen.

In many a case the shadows cast by pathologic changes allow of more than one interpretation; the history may then be the deciding factor. The danger, of course, then is that one may be swayed too much by one's clinical conception of the case.

Important as the knowledge of the roentgenologically normal is in every part of the body, it is of much greater moment in the study of diseases of the chest. Here changes in structure begin to occur almost at birth and continue through to the end. In addition to age, occupation plays a great part as well as previous diseases affecting lungs and circulatory apparatus. Sex plays a part in that the female breast will make the normal bases appear fairly dense.

True, all these changes, whether due to age, occupation or previous disease, are pathologic in the strict anatomic sense, but clinically they may have no significance and have no bearing on the patient's present condition.

Knowing, then, that the lungs of a person at 50 have undergone certain changes which were not present at 25, or that the lungs of an iron-worker, a coal-miner or a marble-cutter may develop certain fibrotic changes as the result of the inhalation of dust particles, one would not rashly conclude that the lung markings or the hilum shadows denote, for instance, tuberculous lesions, but are merely the normal or the usual condition for the particular patient. Furthermore, the knowledge that the lung markings pictured on the roentgenogram are preponderatingly due to blood vessels will guard the observer against mistaking their congestion in cardiac disease for pulmonary infiltrations.

It is also important to remember that with age the hilum shadows increase in size and density, and that the aorta, becoming atheromatous, will appear more prominent in the descending portion of its arch. How many times has this phenomenon been mistaken for an aneurysm!

Roentgen-ray shadows in the lungs cannot be accepted as "characteristic" of any given pathologic condition. We depend, frequently, more on their location than on their appearance. There are a few exceptions; early tuberculous lesions, for instance, which usually occur in the infraclavicular spaces, are generally seen as faint densities of delicate texture extending from the periphery upward. Later, when fibrosis has occurred, the fine strands become denser and more sharply defined. Such images which occur more often in the right than in the left upper lobe are definite evidence of tuberculosis. But the coarse strands which extend from the hilum outward, especially in the lower portions of the chest, are due mainly to blood vessels and should not be mistaken for pathologic infiltrations.

Tuberculosis.—The various changes occurring in the progress of pulmonary tuberculosis are strikingly depicted on the roentgenograms. The early lesions are generally well circumscribed areas of fair density and are made up of nodules and an exudate surrounding them. In healing, the exudate will be absorbed and only very small, dense shadows of the nodules will remain. If the disease progresses these areas become larger, more irregular in outline and denser. In advanced cases both upper lobes and even both lungs may become involved. Frequently the trachea is displaced to the side first affected. There may be a combination of the denser, older lesions and of the fainter more recent invasion. If caseation occurs, the shadows are very dense and irregular in outline. Cavity formation will often occur. In the earlier stages the wall of the cavity may be very thin; later, increasing infiltration around it will be seen as a thick wall and may even hide the cavity almost completely. Frequently more than one cavity will be seen. The walls between them may break down and one very large cavity may result. Occasionally a fluid level can be recognized. If it is large enough to be seen on the fluoroscope, the fascinating spectacle of a shifting fluid level can be had. Small cavities have sometimes disappeared. This has given rise to the contention that they are not cavities in the lungs but merely localized areas of pneumothorax.

If the moderately advanced lesion heals, the infiltration becomes well circumscribed and dense fibrotic bands or calcified areas will be seen.

Tuberculosis of the miliary type presents a striking picture. Both lungs are dotted throughout with very small, fairly dense circular shadows. Occasionally the lung only, and no other part of the body, is affected. This type usually heals and is not so fatal as the generalized acute miliary tuberculosis.

The lesions as a rule involve first the upper lobes. Except in children, hilum tuberculosis is rare; so is tuberculosis limited to the lower lobes. This atypical form may occur in cases of diabetes mellitus or with deformity of the chest, such as kyphoscoliosis.

A word of warning: activity cannot be diagnosed from a roentgenogram.

Pneumonia.—Lobar pneumonia appears as a homogeneous shadow of lobar distribution. It may involve part or all of a lobe, or even more than one. In the stage of consolidation or hepatization, the shadow is very dense and lung markings can hardly be distinguished; in the stage of resolution, the density is less uniform and lung markings begin to show. The value of the roentgen ray lies not so much in the diagnosis of the presence of the disease as in the determination of the stage of the disease, the progress of resolution, the presence of pleural effusions, or the development of gangrene or abscess. The rays also aid in the more exact localization of the disease.

Massive collapse, which occurs after trauma or surgical procedures, causes practically the same density of a lobe or of the entire side of the chest as that seen in lobar pneumonia. It may be distinguished from the latter by the displacement of the heart and mediastinum to the affected side and by the comparatively larger size of the normal side.

Bronchopneumonia presents irregular patches of infiltration scattered throughout both lungs. They may become confluent, and when limited to the area of a lobe may be easily mistaken for lobar pneumonia. If the infiltrations are discrete they may simulate tuberculosis. In that event the true nature of the disease may not be recognized until the lungs become clear.

Abscess.—Abscess and gangrene of the lung may be the result of aspiration of foreign bodies or infectious material, or may follow pneumonia. The former is more frequent in the upper lobes, especially the right, the latter at the bases. If an incompletely filled cavity is present, this condition is easily recognized. If fluid in the cavity completely fills it and there is marked inflammatory infiltration around it, it may be indistinguishable from pneumonia. Here, again, the history will help make the diagnosis.

The process may heal spontaneously in approximately 30 per cent of the cases. Depending on the extent of the lesion, the lung may return to almost normal or marked fibrosis may result.

Bronchiectases.—These resemble a honeycomb in appearance. When all the cavities are filled, this characteristic observation may be absent, and the lesion in the lung resemble that of lobar pneumonia, or small patches of bronchopneumonia.

Iodized oil, injected intratracheally, aids in the localization of abscesses and bronchiectases and shows the size and number of cavities.

Syphilis.—Syphilis of the lung is occasionally encountered. It has no characteristic lesion. It may involve the region of the hilum or any other part. This diagnosis should be made only by the history, a positive Wassermann reaction and the result of antisyphilitic treatment.

Emphysema.—In emphysema there is generally a greater transparency of the lungs and an increased width of the intercostal spaces, and the difference in transparency between inspiration and expiration is very slight. In unilateral obstructive emphysema in children due to the aspiration of radiotransparent foreign bodies, there is a depression of the diaphragm on the affected side and displacement of the heart to the opposite side. It is best studied fluoroscopically because it is most evident at expiration.

Tumors.—Tumors of the lung which are either primary or metastatic, endobronchial or parenchymatous (lobar) can be readily localized by the roentgen ray, but cannot always so readily be diagnosed as such by the roentgenogram alone. The history, a primary lesion elsewhere, and the age of the patient may be necessary for the diagnosis.

Primary tumors are always the carcinomas. The endobronchial, if small and causing no stenosis with consequent atelectasis, may not be demonstrated as early as the patient's symptoms manifest themselves. Often when there is a marked infiltration in the adjacent area the differentiation from a nonmalignant condition, such as pneumonia, cannot be made, and the bronchoscope must be resorted to. Generally, however, there are metastases in the other lung or in the ribs, so that recognition of the lesion is not difficult.

Parenchymatous tumors may resemble lobar pneumonia.

Metastatic tumors, whether carcinomas or sarcomas, have an irregular distribution. Carcinomatous metastasis in particular often appears miliary in character, so that the differentiation from tuberculosis may be extremely difficult. The presence elsewhere of a primary lesion, whether operated on or not, and the fact that these infiltrations have a distinct circular outline which miliary tuberculosis has not, will help in their recognition. Another distinguishing feature is the frequent noninvolvement of the apexes.

The Pleura.—The normal pleura is not demonstrable by the roentgen ray, nor is dry pleurisy. When the pleura has become thickened, it casts a shadow whose density is in proportion to the thickening. Sometimes there is difficulty in differentiating it from effusions or pulmonary infiltrations.

Pleural effusions, whether serous or purulent, present equally dense shadows. The early fibrinoplastic exudate may be seen as a line running parallel to the periphery of the lung from apex to base. Larger free effusions, but without the presence of air or gas, will be seen as a density with a concave upper limit occupying the lower portion of the chest. Encapsulated effusions are generally present near the axillary border of the chest in the upper or the lower portions, or in both. They may be multilocular, but their shadows may fuse, so as to appear as one. Often the lower collection is smaller than the upper, and the surgeon is surprised at the small quantity of pus he obtains until he makes another incision higher up and drains both cavities. Interlobar effusions are readily recognized on the right side by the straight line running from axilla toward the hilum at the level of the sternal end of the fourth rib. On the left side the obliquity of the shadow generally prevents its demonstration.

Pneumothorax is brilliantly shown by the uniform transparency and by the absence of any lung markings in the side of the chest involved. The collapsed lung stands out very sharply against the air or gas, its density depending on the degree of collapse. Heart, aorta and mediastinum are generally displaced to the opposite side. When both fluid and air are present, there is a fluid level which shifts with the change of position of the patient.

Tumors of the pleura cause dense shadows, which are due to the thickening of the pleura itself or to the additional presence of fluid. The differential diagnosis can be made only from the history or the presence of metastases in the opposite lung or in the ribs.

Tuberculosis of the pleura, aside from presenting adhesions, thickening or an effusion, may in rare instances show irregular calcifications which can be localized on the pleura by stereoscopic examination.

The Diaphragm.—In the study of the diaphragm, the fluoroscope is more important than the film. Normally the diaphragm appears as a domelike shadow on both sides of the spine. The right side is generally higher than the left and merges with the shadow of the liver; the left, being situated over the stomach and splenic flexure, both of which contain air or gas, is seen as a narrow curved dense band. Depending on the stature of the patient, the position of the diaphragm varies. In tall, thin persons it is low, in the stout it is high.

Adhesions will cause irregularities in the convexity on either side. On the right side, however, there are often seen, on deep inspiration, small humps which are normal and should not be mistaken for adhesions.

Pulmonary tuberculosis or pneumonia often causes restriction in the movements of the diaphragm on the affected side, even if the lesion is at a distance above it.

Subphrenic abscess or other effusion results in an elevation of the diaphragm on the affected side. On the left side, where the effusion may be interposed between diaphragm and stomach, there is sometimes seen a broad dense shadow between the two with the gastric bubble below it.

Eventration, which is more frequent on the left side, will show the diaphragm as a narrow dense curved band high in the chest, with distended stomach and intestines below it. The heart and the mediastinum are displaced to the right.

The differentiation of this condition from diaphragmatic hernia is often very difficult. An opaque meal will sometimes place part or all of the stomach above the diaphragm in case of hernia, especially when the patient is examined in the recumbent or Trendelenburg position. Pneumoperitoneum, on the other hand, by showing the gas above the stomach and below the diaphragm, will help determine the presence of an eventration.

The Mediastinum.—Of the pathologic conditions occurring in the mediastinum, an enlarged substernal thyroid, a persistent thymus, enlarged glands of tuberculosis or Hodgkin's disease, and tumors, are the most important. The enlarged thyroid, when it extends into the chest, will be seen as a dense mass in the paravertebral portion, compressing the trachea or displacing it to one side. The persistent thymus appears as a broad band above the heart. One should be on guard, however, not to mistake the broadening of the mediastinal shadow, which occurs during expiration or while the crying child holds its breath, for an enlarged thymus. Tuberculous mediastinal glands are generally denser and sometimes partially calcified. The glands of Hodgkin's disease are, as a rule, more lobulated. Frequently it is impossible, roentgenologically, to differentiate between these conditions.

Tumors of the mediastinum are more frequently malignant than benign. Of the latter, cysts are seen most often; of the former, lymphosarcomas. Differentiation between the two varieties is often difficult; as a point of distinction it may be stated that the malignant types have a tendency to be lobulated.

Aneurysm.—Of equal difficulty and importance is the differentiation between tumor and aortic aneurysm. Fluoroscopy may sometimes be of assistance, as aneurysms are apt to show pulsation while tumors will not. But often transmitted pulsation of a tumor will simulate an aneurysm, or a thick-walled aneurysm will not pulsate at all. Occasionally it is possible by fluoroscopy in oblique directions to separate the tumor from the aorta and thus discover the true nature of the shadow.

Aortic aneurysm is best studied fluoroscopically. If the ascending aorta is involved there is a convex shadow to the right of the spine which becomes accentuated when the patient is observed in the second oblique position; i. e., the left side of the chest to the screen, the right toward the tube. Aneurysm of the descending aorta will show a widening of its shadow to the left and, in the first oblique position, it will be seen to encroach on the posterior mediastinum. Aneurysm of the arch is best seen postero-anteriorly as a large spherical shadow above that of the heart. In the first oblique position its encroachment on the posterior mediastinum and, if the patient swallows a barium mixture during the observation, the degree of pressure on the esophagus, if any, can be determined. In this position one can in extreme cases study the erosion of the thoracic vertebrae in this area.

Syphilitic aortitis is shown as a widening of the ascending portion just above the heart. Like aneurysm of the ascending aorta, it is best seen in the second oblique position.

In arteriosclerosis the aorta seems widened, sometimes it is tortuous, and frequently calcified plaques can be seen in the descending portion of the arch.

The Heart.—In the cardiovascular shadow the following points are to be noted: On the right side there is a curve above the diaphragm representing the right auricle; above it is a nearly straight line representing the superior vena cava; on the left side there are, from above downward, the descending portion of the aortic arch, the pulmonary artery, the left auricle (often not clearly visible), and the left ventricle.

The position of the heart and, consequently, its apparent shape are affected by the stature of the patient. In tall, thin persons in whom the diaphragm is low, it is nearly vertical and, in extreme cases, presents the so-called drop heart. In stout persons with much intra-abdominal fat, the heart is raised and rotated on its long axis and is situated more or less transversely. In unilateral elevation of the diaphragm from whatever cause, it is generally displaced to the opposite side. Deformity of the chest, such as kyphoscoliosis, also causes marked displacement of the heart.

The size of the heart, unless there is marked enlargement, is not of great importance, save for comparison at different times in the same individual. Actual change in shape, however, denotes an organic lesion.

The changes produced by valvular lesions are clearly revealed by the roentgen ray.

In mitral insufficiency the entire cardiovascular shadow is enlarged, which is due to hypertrophy of the left auricle and of the right ventricle and to dilatation and hypertrophy of the left ventricle.

In mitral stenosis the left auricle is markedly enlarged because of hypertrophy and dilatation. The pulmonary artery may be slightly enlarged.

In aortic insufficiency the left ventricle is markedly enlarged because of the combined hypertrophy and dilatation. The enlargement is mainly to the left.

In aortic stenosis there is slight enlargement of the left ventricle owing to hypertrophy. The appearance somewhat resembles aortic insufficiency, except that the enlargement of the left ventricle is less marked.

In hypertension the hypertrophy of the left ventricle gives the heart the so-called egg-shape appearance. Frequently associated with it is atheroma of the aorta, which is shown by dilatation of the ascending portion of the arch and of the descending portion, the latter sometimes hiding the pulmonary artery.

Of congenital heart lesions, patent ductus arteriosus has the most characteristic roentgen-ray appearance—marked enlargement of the pulmonary artery.

Pericarditis without effusion is not recognizable by the roentgen ray. When effusion is present, especially when the quantity is large, the shadow is flask-shaped and often occupies as much space to the right of the median line as to the left. The normal curves have disappeared and the pulsations cannot be seen. The cardiohepatic angle generally persists in about 50 per cent of the cases.

THE REPRODUCTIVE ORGANS

In gynecology and obstetrics the roentgen ray was until recently of comparatively little value in diagnosis. Occasionally a fibroid tumor was discovered by calcification within it, or a dermoid cyst of the ovary by the presence of rudimentary or well formed teeth. Sometimes a fetus can be shown in the early months of pregnancy, as a rule not before the third month. In later months the position of the fetus and the number, in case of twins or triplets, may be learned.

With the introduction of pneumoperitoneum it became possible to demonstrate the pelvic organs, the patient being placed in an extreme Trendelenburg position to allow the gas to fill the pelvis.

In 1919, Rubin began to use the roentgen ray for the determination of the patency of the fallopian tubes. This is done by injecting into the uterus a gas which escapes into the peritoneal cavity if one or both tubes are patent. Following this, fluoroscopy or roentgenography is done with the patient in the upright position. If the gas is found under the leaves of the diaphragm, then at least one fallopian tube is patent. It is not possible by this method to say which it is or if both are patent. It has been found safest to use carbon dioxide because it is absorbed most rapidly. This procedure is

contraindicated in acute or subacute disease of the adnexa because of the possibility of infection; another contraindication is a degenerated fibroid.

Within the last few years Rubin and others have used injections of iodized oil in the study of the anatomy and function of the uterus and tubes.

PNEUMOPERITONEUM

Most of the special methods used in conjunction with roentgen-ray examinations have been referred to while dealing with the skull, chest, urinary tract and gynecologic conditions. One method, however, that was briefly referred to in connection with eventration of the diaphragm, namely, pneumoperitoneum, ought to be mentioned here, as it is of great aid in properly selected cases for the demonstration of intra-abdominal disease which cannot otherwise be determined. The most important is adhesions between abdominal viscera and the parietes, sometimes between each other. Subphrenic effusions can be better demonstrated in doubtful cases, also irregularities in the outline of the liver, enlargement of the spleen, occasionally kidney tumors, and retroperitoneal masses. As this procedure is fraught with a none too negligible risk to the patient, it should be resorted to only when absolutely necessary and other means of diagnosis have failed.

CONCLUSIONS

The foregoing sketch should not be concluded without commenting on the present-day tendency of clinicians to equip their offices not only with fluoroscopes but with complete roentgen-ray diagnostic outfits. The technical work is generally done by the office nurse, who has received her hasty instruction from the manufacturer's salesman; at best, a lay technician who has had a somewhat better training presides over the apparatus. The result in the majority of cases is technically poor films interpreted by roentgenologically ill prepared diagnosticians. While the technical difficulties might be overcome, the interpretation of the roentgenograms will continue to have its difficulties, because the clinician has neither the time nor the opportunity to acquire the necessary skill and experience.

The supposed advantage in favor of the clinician is his knowledge of the clinical aspects of the case. This is more than overcome by the natural tendency to favor an interpretation which bolsters up a clinical preconception, and by the unavoidable lack of knowledge of general roentgen-ray pathology with the consequent failure to observe pathologic conditions other than those looked for. As one of many examples, the following case may be cited: A gastro-enterologist who makes his own roentgen-ray diagnosis consulted a roentgenologist as to the nature of a concretion on a film of the urinary tract, but he had overlooked an advanced degree of carcinomatous metastasis in the lumber spine and pelvis. Similar cases could be cited ad infinitum.

The roentgenologist, on the other hand, has or should have an up-to-date knowledge of roentgen-ray pathology as affecting all parts of the body and all pathologic conditions, and is therefore on the alert for all changes shown on the roentgenogram, whether suspected from the clinical history or not. His lack of familiarity with the patient's history can be overcome by cooperation between him and the clinician.

Serious as the situation is from the standpoint of the patient, who is not apt to obtain the best result to which he is entitled, it is more serious from the standpoint of the development of roentgenology as a diagnostic means. Today, the young man who has the desire to devote himself to roentgen-ray diagnosis is discouraged to find that as a specialist he will be unable to earn his livelihood. As a consequence, many a young physician who would have become a good roentgenologist seeks another medical specialty, and roentgenology is the loser. While the part played by a few clinicians in the development of roentgen-ray diagnosis cannot be denied, it is nevertheless true that most progress in this field has come and must come from those who devote their entire time and energy to it alone.

It is curious that a clinician who would not risk diagnosing the gross lesions found on the operating or the postmortem table will not hesitate to diagnose the shadows such lesions cast on a roentgenogram. Perhaps it can be explained psychologically. In roentgen-ray diagnosis a photographic plate or film is used, the result is a "picture," and what is easier than looking at a picture? There is hope that the time will come when it will be realized that interpreting the meaning of the shadows seen on the roentgen-ray "picture" requires as much skill and study and experience as the interpretation of the picture seen through a microscope.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, SECRETARY.

Articles Not Acceptable

POLIOMYELITIS ANTISTREPTOCOCCUS SERUM

Preliminary Report of the Council on Pharmacy and Chemistry

The use of a specific antiserum in the treatment of poliomyelitis has been proposed. A number of reports on the use of such a serum have been published. Two commercial products, each obtained by immunization of horses against strains of streptococcus from poliomyelitic patients, have been submitted to the Council. The Council has not felt justified in accepting these for inclusion in New and Nonofficial Remedies on account of the following objections:

(*a*) The organism from which the serum is produced by the treatment of horses is not generally accepted as the etiologic agent of poliomyelitis.

(*b*) The published reports on the serum are generally favorable, but there is considerable question as to whether the groups of control cases are directly comparable. Physicians who have given special attention to the treatment of poliomyelitis have expressed the opinion (verbally) that it is not fair to make comparison between the treated cases on the one hand and the general figures for mortality on the other. They believe that under these conditions controls will show a less favorable death rate than the treated cases because of a tendency to select for treatment cases seen early, whereas a larger proportion of severe cases will be found in control groups unless great care is exercised.

(*c*) It has been found that, on account of widespread favorable newspaper publicity given the serum, the physician often feels compelled to use it, though not convinced of its efficacy. Indeed, laymen often demand its employment. One health officer advises it in order that the physician may protect himself against adverse criticism. Personal contact with physicians who have had opportunity to observe the serum, but who did not wish to publish their data or to be quoted directly, indicated great doubt as to the usefulness of the material.

In view of these considerations the Council decided not to accept any poliomyelitis antistreptococcus serum until more positive evidence for its usefulness becomes available.

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SATURDAY, FEBRUARY 25, 1928

SEPARATION OF THE ACTIVE PRINCIPLES OF THE POSTERIOR LOBE OF THE PITUITARY GLAND

Like the pancreas and the suprarenal glands, the pituitary contains two portions that differ in function and in pharmacology. Sollmann [1] has pointed out the remarkable fact that the parts of the suprarenal and pitiutary which are the most important to life have the least pharmacologic actions, while the parts whose extracts produce exceedingly striking pharmalogic effects—the suprarenal medulla and the posterior pituitary—appear to be of minor importance to the organism. Equally remarkable are the manifold activities of the extract of that portion of the pituitary gland which is not so important to life, as exemplified in the official solution of pituitary (posterior pituitary lobe); its effect in stimulating uterine contractions (oxytocic activity), its ability to raise blood pressure (pressor activity) and its marked diuretic-antidiuretic effects (renal activity) are well known. The chief clinical applications of these effects are in themselves likewise widely variant; the use of pituitary solutions to stimulate uterine contractions in labor; the employment in conditions of low blood pressure and in postoperative intestinal paresis; the injection of extract of pituitary, which causes pronounced antidiuresis in diabetes insipidus, though, as Useful Drugs emphasizes, merely temporary in effect. These different observations alone may arouse skepticism as to whether or not the activity is due to a single substance. Critical reference books, such as New and Nonofficial Remedies, cautiously refer to the extractive material from the posterior pituitary lobe as "substance or substances."

The chemical information concerning the pharmacologically active constituents of extracts of pituitary is rather meager. While a number of investigators have undertaken some exceptionally creditable researches, until the present time the evidence has not been sufficient to warrant a positive statement as to whether or not the activity is due to a single chemical substance or hormone. The American investigators of the posterior lobe of the pituitary gland, particularly those of the U. S. Hygienic Laboratory and of the Abel school, have leaned toward the unitarian theory. English workers have advocated the multiple hormone theory. Some Germans have even claimed the presence of more than three principles. In one of his recent articles on the pituitary extract, Abel,[2] the most prominent biochemist in this field, stated that "we therefore conclude that all the evidence at hand is greatly in favor of our belief that the oxytocic, pressor, diuretic and respiratory activities referred to above are properties of one and the same substance." [2]

Connected with the debate concerning the active principles has been the matter of assay. The United States Pharmacopeia fixes the oxytocic method of standardization, which in the hands of most workers has shown itself to be amply sufficient for determining the relative strength of commercial preparations. On the other hand, workers in the laboratory of Parke, Davis & Co., which firm first introduced solution of pituitary as a proprietary brand, for the past ten years have contended for a blood pressure method of assay in addition to the oxytocic as far as it concerned their own product.[3] As a result of the observations of many assays by the double method, as well as some other factors, the Parke, Davis & Co. workers felt that the evidence of more than one principle could probably be indicated by the two different quantitative biologic methods of determining activity, if applied to various fractionations of the posterior lobe. The results of a well conducted research by Kamm, Aldrich, Grote, Rowe and Bugbee [4] on this problem have just been made available. Using also methods of fractionation by precipitation and methods of dialysis, they obtained two portions of pituitary extract, one of which responded almost entirely to the oxytocic method of assay and hardly at all to the pressor method, whereas another portion was found to respond to the pressor method and practically not at all to the oxytocic. It will be recalled that some time ago Abel and his co-workers reported the isolation of a potent preparation which stimulated the excised guinea-pig uterus in a dilution of 1:20,000,000,000. Kamm and his colleagues advance the argument that the product of Abel was exceedingly strong in oxytocic activity and much less in the pressor activity. In other words, it is their belief that Abel had been working with a partial separation of the active principles, which separation is more easily recognized when two quantitative methods of assay have been applied. Furthermore, Kamm has reported that, by

1. Sollmann, Torald: Manual of Pharmacology, ed. 3, p. 462.

2. Abel, J. J.; Rouiller, C. A., and Geiling, E. M. K.: J. Pharmacol. & Exper. Therap. **22**: 289 (Nov.) 1923.

3. According to method of Hamilton and Rowe, J. Lab. & Clin. Med. **2**: 120 (Nov.) 1916.

4. Kamm, Oliver; Aldrich, T. B.; Grote, I. W.; Rowe, L. W., and Bugbee, E. P.: The Active Principles of the Posterior Lobe of the Pituitary Gland: I. The Demonstration of the Presence of Two Active Principles; II. The Separation of Two Principles and Their Concentration in the Form of Potent Solid Preparations, J. Am. Chem. Soc. **50**: 573 (Feb.) 1928.

recombining the fractions in the original proportions, a pituitary solution may be obtained indistinguishable from the original, thus showing that injury to the active principle has not taken place owing to separation. Both the principles, according to these workers, have been obtained in a state of highly potent water-soluble powders. They report that the substantially pure pressor principle, which they term β-hypophamine, has been obtained as a white powder eighty times as potent as the International Standard Powdered Pituitary, while the oxytocic principle (α-hypophamine) has been obtained in a form 150 times as potent as the International Standard Powdered Pituitary. In this research the indications are that the pressor principle is responsible for the diuretic-antidiuretic action of the pituitary extracts.

This important separation of the principles of the extract of pituitary should now make it possible for the physiologist, the pharmacologist and the clinician to interpret more correctly the responses caused by the administration of solution of pituitary. Furthermore, the chemical identity and isolation of the principles is another step necessary toward the more complete understanding of the profound influences and actions of the pituitary gland. Undoubtedly this will lead to clinical applications of these principles, though at present the work is in an experimental state. The medical profession will look forward to further observations along these lines and to the outcome of the clinical applications of such compounds under controlled conditions, a report on which will be made available in the near future, no doubt, by the Council on Pharmacy and Chemistry of the American Medical Association.

EXERCISE AND THE SPLEEN

The relative mass of muscle tissue in the body is so large that the nature of the chemical changes occurring in it dominates the metabolic picture of the whole organism. Thus the combustion of foodstuffs taking place in the muscle is responsible for the traditional conception of the animal body as an acid-producing organism. The large production of carbon dioxide and other acids incident to biologic oxidation justifies this view. There is, however, another aspect from which to consider the physiologic importance of muscle. Vigorous muscular activity calls forth a series of reactions surprising in their intensity, diversity and far-reaching effects. The production of lactic acid during the cycle of contraction results indirectly in a respiratory response in the direction of increased pulmonary ventilation. If the activity is prolonged, the hydrogen ion concentration of the blood may increase perceptibly and lactic acid may appear in the urine. The augmented heat production is another recognized accompaniment of exercise. The change in the circulatory system is one of the most striking features of the mass response of the body to the demands of muscular activity. There is a prompt increase in heart rate and a concomitant augmented circulation rate together with an increased oxygen-carrying power of the blood because of an elevated concentration of hemoglobin and erythrocytes. The probable mechanism involved in this efficient adaptation has received considerable attention, but only recently has attention been focused again, and from a somewhat different point of view, on the spleen, an organ that appears to play a larger part in the circulatory response to exercise than has heretofore been suspected.

In a series of experiments recently reported, Barcroft and Stephens[1] have obtained data on the variation in size of the spleen correlated with exercise. The organ was observed directly in situ and also after being withdrawn intact from the abdomen as a permanent extracutaneous appendage. The results obtained by the two methods are concordant. After a tracing of the contour of the spleen of the resting dog had been obtained, the animal was caused to run round a track, to climb stairs, or to swim in a tank of warm water. After each form of exercise there was a striking decrease in the size of the spleen, amounting to as much as 50 per cent in one swimming experiment and 75 per cent in a given running test. The most frequent values obtained for contraction ranged from a third to a half of the resting size of the organ. Accompanying this alteration in volume is a change in color, the previously dark red tissue becoming pale. Similar changes in dimension of the spleen occur after hemorrhage; likewise the size was always less after death than during life. Calculations of the blood volume of the dogs in these experiments indicate that the shrinking of the spleen could account for as much as one fifth the normal blood volume, an addition to the oxygen-carrying capacity of much importance under the stress of vigorous exercise. The splenic blood, it should be recalled, has a greater concentration of erythrocytes than that of the systemic circulation.[2]

The English investigators point out that the diminution in the size of the spleen is not clearly proportional to the duration of exercise but seems to be a response occurring early in the period of muscular activity. Experiments of a supplementary nature have been obtained by Scheunert and Krzywanek,[3] who could not demonstrate any difference in red blood cell concentration before and after exercise in splenectomized dogs one year after the operation. From this observation they concluded that the spleen is the only reservoir of this kind for blood.

A phenomenon of such relative magnitude and susceptible of being reproduced stimulates inquiry into the mechanism of the reaction. In the investigation of Barcroft it was found that when psychic reactions

1. Barcroft, J., and Stephens, J. G.: J. Physiol. **64**: 1, 1927.
2. Scheunert, A., and Krzywanek, F. W.: Arch. f. d. ges. Physiol. **213**: 198, 1926.
3. Scheunert, A., and Krzywanek, F. W.: Arch. f. d. ges. Physiol. **217**: 261, 1927.

implying exercise were elicited there followed regularly a decrease in the size of the spleen, a fact suggesting a nervous control rather than a humoral pathway. This was shown to be true by the failure to observe a change in size after exercise when the organ was denervated. Similar conclusions may be drawn from the experiments of Hargis and Mann.[4] With dogs in which the spleen was contained in situ in a permanent oncometer, clapping the hands, teasing or similar stimuli resulted in a decrease in size of the organ, only, however, when the nerves were intact. The ultimate cause of the contraction may rest in the muscle fibers of the spleen or in the alteration of capillary size.

The spleen has long been an organ of mystery. From ancient times varied functions have been attributed to it, but it was early found that it is not essential to life. The equivocal results obtained when experimental proof of various hypotheses of function was sought caused interest in this organ to diminish. The studies now made available have served to redirect attention to the physiology of this organ.

CLASSIFICATION OF STREPTOCOCCI

In the annals of nature, wars within species, even world wars, have minor rank, for the species survives with the victors. Struggles between species, however, are wars of extermination. In this class is man's fight against those forms of animal and of plant life which are harmful to him. David and Robert Thomson see in the struggle against the invisible bacteria and protozoa man's last effort for complete domination over the lower forms of life. As yet, they state, the bacteria are our masters. "They are the chief causes of our miseries and our death."

In a recent publication,[5] knowledge is collected which may make more effective the fight against one of man's chief enemies, the streptococcus. Such a collection is greatly needed for, up to the present time, precise knowledge has existed only with regard to the group of hemolytic streptococci. Bergey, in 1925, described twenty-four species of streptococci. It seems likely, however, that several hundred varieties exist.

H. Warren Crowe[6] lays down three essentials necessary to the classification of living organisms: 1. Types must be constant. 2. Individuals or types must be recognizable. 3. Biologic characters must be diverse enough for differentiation but constant enough to enable them to be known again. After many years of work, Crowe has developed a medium on which, in primary culture, all nonhemolytic streptococci can be separated into four main groups. Subsequent divisions can be made, respectively, into subgroups and varieties. The medium must be used in plate cultures, and, contrary to the usually admitted desideratum, it is opaque. Reflected rather than transmitted light brings out the distinctions, and a hand lens or low power microscope also may be employed. The four main classes are identified according to whether they color the medium yellow, green or black, or leave it unchanged. Subgroups and varieties are identified by the recognition of more minute characteristics.

The Thomsons by a different method have made divisions similar to those of Crowe. After a preliminary examination, which includes an anaerobic culture, they separate the organisms into five main groups. For this work they incubate aerobically for from two to six days on testicular agar plus 5 per cent boiled blood and inspect the growths with the naked eye. Color changes in the medium are here also the basis of classification. To the extent that the period of acquaintance and the distance between their laboratories have allowed of comparison, the efforts of the Thomsons and of Crowe are in accord. The Thomsons, however, have employed photography on a large scale in their work. This additional measure may prove to be of great value. By this means records of appearance of colonies and organisms are rendered permanent, exact and portable. It is a method that lends itself to standardization, and standardization there must be if the varieties of streptococci are ever to be separated and identified. That such identification is vital to the development of effective treatment against many clinical disorders is a strong probability—to those who know most about the streptococci it seems almost a certainty.

4. Hargis, E. H., and Mann, F. C.: Am. J. Physiol. **75**: 180 (Dec.) 1925.
5. Thomson, David; and Thomson, Robert: Historical Survey of Researches on the Streptococci, Annals of the Pickett-Thomson Research Laboratory **3**, November, 1927.
6. Crowe, H. W.: The Differentiation and Classification of the Nonhemolytic Streptococci by the Use of Crowe's Medium, Annals of the Pickett-Thomson Research Laboratory **3**: 251 (Nov.) 1927.

Current Comment

COORDINATION OF FEDERAL HEALTH ACTIVITIES

The House of Delegates of the American Medical Association has endorsed[1] pending legislation to coordinate federal health activities with a view to increased efficiency and economy, commonly referred to as the Ransdell bill[2] and the Parker bill.[3] These bills are identical so far as they authorize the President to consolidate and coordinate the public health activities of the government, provide for cooperation by the Public Health Service with other agencies of the federal government and with state governments, and open the resources of the Public Health Service to students who desire to conduct serious research in public health problems. They make the same provisions, too, for reorganization within the service, designed to increase its efficiency. The Ransdell bill goes further, however, and authorizes an appropriation of ten million dollars to establish and operate a national institute of health to study the fundamental problems of diseases of man and matters pertaining thereto, and authorizes the govern-

1. Proceedings of the House of Delegates, 1927, p. 58.
2. S. 871.
3. H. R. 5766.

ment to receive gifts and bequests to further the activities of the institute. In the Senate, the Ransdell bill is pending before the Committee on Commerce, and action has thus far not been taken on it. In the House of Representatives, the Parker bill was referred to the Committee on Interstate and Foreign Commerce, and public hearings have been held by a subcommittee. The hearings were marked by protests against any authorization of the consolidation in the Public Health Service of the public health functions of the government, emanating chiefly from interests that professed fear lest a transfer of functions from the Department of Agriculture to the Public Health Service might disturb commercial practice and relations. The usual objections also were raised by interests opposed to any progress in public health research or administration along scientific lines. The subcommittee has made its report to the Committee on Foreign and Interstate Commerce, but that committee has not yet reported the bill back to the House for action. Physicians interested in the advancement of public health and desiring to see the policy of the Association as determined by the House of Delegates carried into effect should express their views to their respective Senators and Representatives, more particularly to the chairman of the Senate Committee on Commerce, Hon. Wesley L. Jones of Washington, and to the chairman of the House Committee on Interstate and Foreign Commerce, Hon. James S. Parker of New York.

THE NEW ENGLAND JOURNAL OF MEDICINE

Centenarians are rare in any living activity. The *Boston Medical and Surgical Journal*, as reported under the news from Massachusetts, has just celebrated its one hundredth anniversary, having first come limply but limpid from the press on February 19, 1828. To this hale and hearty centenarian our congratulations are tendered. With the passing of the anniversary the periodical embarks on a greater field of activity, including now in its representation the state societies of Vermont and New Hampshire as well as that of Massachusetts. Additional mergers loom and will no doubt be consummated in the near future. Thus the periodical well merits its new title, the *New England Journal of Medicine*. Since its establishment the Boston journal has stood always for the highest ideals in medical ethics. As a member of the Cooperative Bureau it has supported the standards set for the advertising of pharmaceutic and biologic preparations by the Council on Pharmacy and Chemistry of the American Medical Association. Its editor, Dr. Walter P. Bowers, and his assistants, are animated by a desire for the best in scientific medical journalism. The American medical profession can well sustain several weekly medical periodicals. Each may be a stimulus to the others. The time has passed when any medical periodical can long survive or gain the support of the American medical profession if it is devoted to policies that are reactionary, to commercial interests that are without regard for honesty, or to the personal ambitions of promoters. The principles and ethics of medical journalism should be as sincere as those of medicine itself. The *Boston Medical and Surgical Journal* has had a wonderful record for one hundred years—its future should be glorious.

Association News

THE MINNEAPOLIS SESSION

The Scientific Exhibit

SPECIAL EXHIBIT ON MORBID ANATOMY

The Exhibit on Fresh Pathology, which has become an established feature in connection with the Annual Scientific Exhibit, will be under the direction of Dr. Elexius T. Bell, professor of pathology and head of the department of pathology, University of Minnesota Medical School, Minneapolis. The other members of the Committee on Fresh Pathology as announced by the local Committee on Scientific Exhibit are as follows: Willard L. Boyd, D.V.S., professor of veterinary medicine, University of Minnesota; Benjamin J. Clawson, M.D., professor of pathology, University of Minnesota Medical School; Clifford P. Fitch, D.V.M., professor of veterinary medicine, University of Minnesota; Kano Ikeda, M.D., instructor of pathology, University of Minnesota Medical School; pathologist, St. Luke's Hospital, St. Paul; James W. Kernohan, M.B., instructor of pathology, University of Minnesota Graduate School of Medicine, Rochester, Minn.; James S. McCartney, M.D., assistant professor, department of pathology, University of Minnesota Medical School; Ralph G. Mills, M.D., professor of pathology, University of Minnesota Graduate School of Medicine, Rochester, Minn.; John F. Noble M.D., assistant professor of pathology, University of Minnesota Medical School; pathologist, Ancker Hospital, St. Paul; William A. O'Brien, M.D., assistant professor of pathology, University of Minnesota Medical School; pathologist, university hospitals, Minneapolis; Myron H. Reynolds, D.V.M., professor of veterinary medicine, University of Minnesota; Harold E. Robertson, M.D., professor of pathology, University of Minnesota Graduate School of Medicine, Rochester, Minn.; Margaret Warwick, M.D., assistant professor of pathology, University of Minnesota Medical School; pathologist, Charles T. Miller Hospital, St. Paul; Cecil J. Watson, M.D., instructor of pathology, University of Minnesota Medical School; pathologist, Minneapolis General Hospital, Minneapolis.

Fresh pathologic material will be obtained daily from the hospitals in Minneapolis and St. Paul, supplemented by material from the School of Veterinary Medicine of the University of Minnesota.

SPECIAL EXHIBIT ON CLINICAL LABORATORY METHODS

The Committee on Scientific Exhibit of the Board of Trustees, on the recommendation of its advisory committee, has authorized a special exhibit or series of demonstrations of the most important newer clinical tests of a chemical nature, including the chemistry of the blood, digestion and urinary secretions. It is planned to make the exhibit instructive for the general practitioner by stimulating demonstrations by competent biochemists. The exhibit is being planned under the direction of Dr. Victor C. Myers, professor of biochemistry, Western Reserve Medical School, Cleveland.

PERSONNEL OF COMMITTEE ON SECTION EXHIBIT, SECTION ON DISEASES OF CHILDREN

The Committee on Section Exhibit appointed by the officers of the Section on Diseases of Children is composed of the following: Julius Hess, M.D.; LeRoy S. Palmer, Ph.D.; F. W. Schlutz, M.D.; Harry Steenbock, Ph.D., and William Weston, M.D. The announcement of the scope of the exhibit appeared in this department, February 4.

TIME LIMIT FOR APPLICATIONS FOR SECTION EXHIBITS

As has been announced previously, there will be three section exhibits in the Scientific Exhibit; namely, the exhibits

under the auspices of the Section on Dermatology and Syphilology, the Section on Diseases of Children and the Section on Radiology. Applications of participants in any of the section exhibits must be in the hands of the committee chairman by March 1. For the Section on Dermatology and Syphilology, address Dr. Fred Weidman, Thirty-Sixth Street and Hamilton Walk, Philadelphia, Pa.; Section on Diseases of Children, Dr. F. W. Schlutz, 121 Millard Hall, University of Minnesota, Minneapolis, Minn.; Section on Radiology, Dr. P. M. Hickey, University Hospital, Ann Arbor, Mich.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Rabies Extends Northward.—For several years rabies has been prevalent in southern California. The occurrence of nearly fifty cases in dogs in Marin County since Nov. 1, 1927, marks its extension northward into territory where it has not been extensive for years. The board of supervisors has taken steps to control the disease by enacting an ordinance which empowers county officials to destroy dogs that have not been vaccinated against rabies.

Externship in Dermatology.—An externship in dermatology and syphilology is open at Stanford University School of Medicine, San Francisco, for which an appointment will be made, August 1, for one year at a salary of $75 a month. About thirty dermatologic cases are treated daily and about 300 syphilitic persons are seen weekly; there are facilities for research. Applications must be filed before June 1, stating age and educational qualifications.

Another "College" President Gone Wrong.—"Dr." Carl J. Weberg, a Los Angeles chiropractor, was held overnight in jail, recently, pending arrangements for bail on a "possession of liquor" charge, it is reported. The "doctor" is president of the Pasadena College of Chiropractic; he formerly handled hose in the Pasadena Fire Department until suspended for insubordination. In 1926, the Pasadena Health Department questioned his right to handle maternity cases, as his petition to establish a maternity hospital had been refused.

Appointments, Leaves of Absence and Resignation.—At a meeting of the board of regents of the University of California in Los Angeles, February 14, Chauncey D. Leake, Ph.D., was appointed professor of pharmacology in the medical school, and Dr. Alfred C. Reed, professor of tropical medicine in the George Williams Hooper Foundation for Medical Research. The resignation of Dr. Herbert S. Thompson, assistant clinical professor of surgery in the medical school, was accepted. Leaves of absence were granted to Dr. Howard Morrow, clinical professor of dermatology, from January 20 to May 20; Dr. William G. Moore, associate clinical professor of obstetrics and gynecology, from February 26 to June 1, and Dr. Frank Hinman, clinical professor of urology, from January 27 to May 9.

County Societies and Real Estate.—At least two county medical societies in California have purchased real estate with the object of providing for a permanent home. The Los Angeles County Medical Association purchased a lot on a street that was transformed into a boulevard and thus was enormously increased in value. The association then purchased a second lot a few blocks away for $80,000, and it is understood that the contract has already been let for a building. The first lot has been leased to a corporation composed largely of physicians who will erect a medical office building. *California and Western Medicine* estimates that the real estate purchased in the last seven years by the Los Angeles County Medical Association has a value now of about $380,000. The San Francisco County Medical Society has purchased an old mansion, the Irwin home, practically for the value of the lot, which is now the home of the society.

Society News.—Dr. Nathaniel Austin Cary, Oakland, addressed the Alameda County Medical Society, recently, on "Interesting Foot Lesions with Special Reference to Osteitis."——Dr. Charles D. Ball, Santa Ana, the only remaining charter member, addressed the Orange County Medical Society, January 12, on "Incidents of the Past"; his son, Dr. Dexter R. Ball, was elected president of the society for 1928, following five years' service as secretary; Dr. Danforth C. Cowles, Fullerton, read a paper before the society on "A Review of 1927."——A symposium on the thyroid gland was presented before the Riverside County Medical Society, recently, by Drs. William W. Roblee, Paul E. Simonds, Paul F. Thuresson and Charles R. Geith.——Dr. Oliver D. Hamlin, Oakland, addressed the San Joaquin County Medical Society, January 5, on "County Hospitals of the State of California."——Dr. Emanuel Friend, Chicago, addressed the Los Angeles County Medical Association, February 16, on "Abnormalities of the Bowel Tract: Their Blood Vessels and Their Surgical Significance."——The Southern California Public Health Association, Los Angeles, gave a banquet, January 13, in honor of Sir Arthur Newsholme, former chief medical officer of the governing board of England and Wales. Sir Arthur and Lady Newsholme are spending the winter at Santa Barbara.——Dr. Wirt B. Dakin addressed the Los Angeles Urological Society, February 7, on "Renal Functional Tests."

COLORADO

The Bonfils Foundation.—Mr. Frederick G. Bonfils, publisher of the Denver *Post*, has set aside $500,000 to establish a foundation, which will offer $250,000 as a reward for a cure of tuberculosis and $250,000 as a reward for a cure of cancer. The details as to what constitutes a cure and how it shall be established will be worked out with the cooperation of some of the best medical schools and hospitals. Other plans in connection with the Bonfils Foundation will be published at the proper time.

CONNECTICUT

Thirteen in One Family Had Smallpox.—A somewhat unusual feature of the outbreak of smallpox in the vicinity of Cromwell, Middletown and Chester was the occurrence of thirteen cases of the disease in one family, including the parents, seven sons, two daughters and two grandchildren.

Personal.—Lafayette B. Mendel, Sc.D., professor of physiologic chemistry, Yale University, New Haven, addressed the Royal Canadian Institute, Toronto, recently, on "Some Aspects of Animal Growth."——Miss Helen Chase, Waterbury, has given $10,000 to the Waterbury Mental Hygiene Clinic to supplement the work now being done.——The president of Yale University announces the appointment of Treat B. Johnson, Ph.D., as Sterling professor of chemistry. Dr. Johnson, who is known for research on the chemistry of bacteria, has been a member of the Yale faculty since 1898. During the World War, he conducted investigations for the chemical warfare service and was director of a field laboratory at New Haven, carrying on investigations in gas experimentation.——Dr. Alvin H. Cranz has been appointed physician to the Connecticut State Prison at Wethersfield, succeeding Dr. Percy B. Battey, resigned.

DISTRICT OF COLUMBIA

Personal.—Francis G. Benedict, Ph.D., director, nutrition laboratory, Carnegie Institution, Washington, gave an address recently at Mount Holyoke College, South Hadley, Mass., on "Heat Production of Man and Animals and Factors Affecting It."

Colonel Ashford Retires.—After thirty years of distinguished service in the U. S. Army Medical Corps, Col. Bailey K. Ashford was placed on the retired list, February 11. Colonel Ashford was born in Washington and graduated from Georgetown University. Much of his service has been spent in Porto Rico, where he was president of the Porto Rico Anemia Commission, which, between 1904 and 1910, treated about 300,000 persons for hookworm. Colonel Ashford had previously demonstrated that the so-called tropical anemia in Porto Rico was produced by a new species of hookworm known as *Necator americanus*. He has done much work, also, on sprue. In the World War he served with the first division, then as commander of the sanitary school at Langres and as corps surgeon to the seventh corps. He has been awarded the Distinguished Service Medal.

Bill to Regulate Practice of Healing Art.—An attempt has been made by Senator Copeland to solve the difficulties in the District of Columbia which arise in connection with the regulation of drugless healing and the practice of medicine. He has introduced a forty-three page bill which would set up a commission on licensure to practice in the district, consisting of the president of the board of commissioners,

the U. S. Commissioner of Education. the U. S. District Attorney, the superintendent of schools and the health officer. This body would establish minimum standards of education in the healing art and might establish minimum standards for hospitals for intern training. It would appoint a board of examiners in the basic sciences, a board of examiners in medicine and osteopathy, a board of examiners in midwifery and such other boards in drugless healing as may seem necessary. The commission would refer to the basic science board for examination in anatomy, physiology, chemistry, bacteriology and pathology, applicants for licenses to practice the healing art. There are pending in Congress now several bills which would create separate boards to regulate in the district the practice of medicine and the several cults. If the Copeland bill becomes a law, there would be no occasion for the passage of any other measure.

INDIANA

Death Rate Drops.—The death rate in Indiana during 1927 decreased to 12.3 per thousand of population from 13.2 in the previous year. The number of births also declined slightly. There was a decrease in infant mortality to 59 per thousand from 73.4. Heart disease led the list of causes of death, with cerebral hemorrhage second. Accidental deaths generally increased, those due to automobile accidents to 861 from 697 in 1926. There was a reduction in the death rates from tuberculosis, typhoid, scarlet fever, measles, pneumonia, nephritis, influenza and whooping cough.

Federation of Labor Requests Medical Talks.—The Fort Wayne Federation of Labor requested and was granted the cooperation of the Allen County Medical Society in giving a series of six educational lectures on health topics before the federation, to which the public is invited. The purpose of the lectures is said to be a desire to inform the public of the need of well educated physicians and to give them a better idea of how to protect their health. The first topic, which will be given February 27, is "A Physician's Education from the Beginning until He Starts in Practice"; the second, "Cancer," and the third, "The Value and Use of the Roentgen Ray in Medical Science."

Recalling the Old Days.—The Hancock County Medical Society, Greenfield, invited the wives of members and widows of deceased members to attend a dinner meeting, February 6, which was featured by discussions of the old days and an exhibition of instruments, books and supplies of a century ago. The minutes of the first meeting of the society, Jan. 6, 1874, were on display. There was a symposium on obstetrics one hundred years ago and now. Dr. Charles E. McCord, Fortville, spoke on "The Old Timer"; Dr. Samuel W. Hervey, Fortville, "The New," and Dr. Jesse E. Ferrell, Fortville, "Anesthetics in Obstetrics." Dr. Stewart Slocum gave a review. Dr. Charles H. Bruner, Greenfield, was elected president for the ensuing year.

Personal.—Dr. William H. Meyer, formerly resident physician at the Williams Hospital, Lebanon, has been appointed acting assistant surgeon in the U. S. Public Health Service and assigned to duty at U. S. Marine Hospital number 2, Boston.——Albert Stump, lecturer on medical jurisprudence, Indiana University School of Medicine, addressed the Fountain-Warren County Medical Society at Veedersburg, February 6, on "Medical Jurisprudence."——Dr. George S. Bond, Indianapolis, addressed the Cass County Medical Society, Logansport, February 16, on "The Heart."—— Dr. James O. Parramore, Crown Point, represented the Indiana State Medical Association at the annual meeting of the Indiana Tuberculosis Association, Gary, February 15-16; Dr. James H. Stygall, Indianapolis, was elected president of the association for the coming year.——Dr. Elmer C. Singer has been appointed a member of the board of health of Fort Wayne to succeed Dr. Raymond J. Berghoff, resigned.

IOWA

Injunction Against "Herb Doctors."—Judge Hamilton granted an injunction, January 13, against William Lovell and his partner "Dr." Barnett from practicing medicine in the state of Iowa following a two-day hearing. The defendants, according to the Des Moines *Tribune*, are "herb doctors." The complaint against them was made by the state medical board.

Personal.—Dr. Henry S. Houghton, recently appointed dean of the State University of Iowa College of Medicine, visited Iowa City, January 21, following his arrival from China; he assumed his administrative duties at the university medical school, February 1.——Dr. Daniel C. Steelsmith, Sibley, has been appointed deputy state health commissioner and has moved to Des Moines, succeeding Dr. James Wallace, resigned, and Dr. Thomas E. Powers has been appointed to succeed him.

KANSAS

Society News.—The Douglas County Medical Society at its annual meeting, recently, gave a vote of thanks to Mrs. J. B. Watkins, Lawrence, for her offer to build and equip a modern hospital for that city. Dr. Harold P. Kuhn, Kansas City, Mo., addressed this meeting on "Empyema."——At the January 12 meeting of the Marshall County Medical Society, Marysville, Dr. Harold H. Woods read a paper on "Gastric Ulcer," and Dr. John W. Randell, "That Pain in the Right Side of the Abdomen." A meeting on the same day by the Stafford County Medical Society, St. John, was open to the public; among others, Dr. John T. Scott read a paper on "The General Practitioner's Open Sesame," and Dr. Friedrich W. Tretbar on "Birth Control."—— The Golden Belt Medical Society, the Shawnee County Medical Society and the Missouri-Kansas Neuropsychiatric Society met jointly at the Menninger Sanatorium, Topeka, January 5. Among others, Dr. Peter T. Bohan, professor of medicine, University of Kansas School of Medicine, Kansas City, spoke on "Medical Economics"; Dr. Middleton L. Perry, superintendent of the state hospital, Topeka, on "Progress in Psychiatry," and Dr. Henry W. F. Woltman, Mayo Clinic, Rochester, Minn., on "Pain as a Symptom of Disease in the Nervous System."

LOUISIANA

Society News.—At a joint meeting of the Orleans Parish Medical Society and the New Orleans Gynecological and Obstetrical Society, February 15, Dr. Walter W. Chipman, Montreal, among others, spoke on abdominal surgery for women, and Dr. John O. Polak, New York, on toxic poisoning during pregnancy.

Dairy School of Instruction.—Aiming to assist in providing safe milk in Louisiana, the state board of health and the New Orleans Board of Health sponsored a dairy school of instruction, February 16-20, to which the public and milk producers were invited. Special features included visits to the 'Wisconsin Dairy Special Demonstration Train, to pasteurizing plants, abattoirs and to grade A dairies about New Orleans. Among the speakers were W. R. Dodson, dean, college of agriculture, University of Louisiana, Baton Rouge, on "Development of Dairying in Louisiana"; Fred R. Zimmerman, governor of Wisconsin; Leslie C. Frank, sanitary engineer, U. S. Public Health Service; Dr. William H. Seemann of the Louisiana State Board of Health, "The Relation Milk Bears to Disease Dissemination"; Edward P. Flower, D.V.M., secretary, live stock sanitary board, Baton Rouge, "Live Stock Diseases and Their Control"; George W. Putnam, Chicago City Health Department, "The Milk Control Problem in Chicago"; Dr. James C. Anderson, state health officer of Texas, "Milk Control in Texas"; Dr. Charles C. Bass, dean, Tulane University of Louisiana School of Medicine, New Orleans, and Dr. Oscar Dowling, state health officer.

MASSACHUSETTS

Personal.—Dr. Frank B. Mallory was appointed professor of pathology at the Medical School of Harvard University, Boston, February 1, and Dr. Cornelius P. Rhoads, instructor in pathology.

Tuberculosis Conference.—About 200 persons attended a conference of the Massachusetts Tuberculosis League, Boston, February 6; among others, Dr. Harry E. Kleinschmidt of the National Tuberculosis Association, New York, gave an address. A film was exhibited on the technic of early diagnosis of tuberculosis which is to be exhibited to medical societies in other communities during March. Dr. Kendall Emerson, Worcester, president of the league, presided.

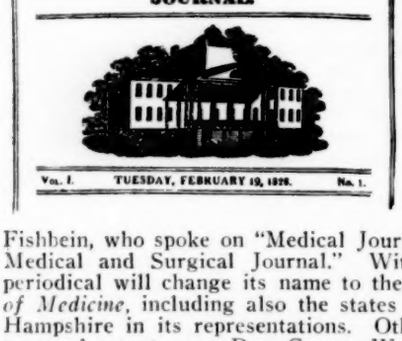
Hospital News.—The Massachusetts Women's Hospital dedicated a new wing containing twenty-three private rooms, January 12; Governor Fuller attended the exercises, and Dr. Henry T. Hutchins gave the address.——Dr. Elliott C. Cutler, professor of surgery, Western Reserve University School of Medicine, Cleveland, will address a staff meeting of the Massachusetts General Hospital, Boston, March 8, on "Experimental Production of Abscess of the Lung." Physicians, students and nurses are invited.

Registrations Revoked and Suspended.—At a meeting of the board of registration in medicine, Boston, January 26, the registration of Dr. Christian A. Nelson was revoked on the charge of gross misconduct in an alleged attempt to pro-

duce an abortion. The registration of Dr. Freeman W. MacDonald was suspended for six months on the charge of gross misconduct, as shown by violation of the prohibition act. The registration of Dr. Richard H. Houghton was suspended until further action of the board on the charge of gross misconduct and deceit, as shown by his sworn testimony in a court case.

Society News.—The Boston Orthopedic Club was addressed, February 13, at the Boston Medical Library by Dr. Nathaniel Allison, among others, on "The Adaptive Changes in the Hip in Congenital Dislocation."——Dr. John Lovett Morse, Boston, read a paper on "The Thymus Obsession" at the one hundred and fourth meeting of the New England Pediatric Society, Boston, February 10.—— Dr. George C. Shattuck, Boston, addressed the Boston Health League, February 15, on "Scenes in Tropical Africa."——Dr. Frankwood E. Williams, New York, medical director, National Committee for Mental Hygiene, addressed the Massachusetts Psychiatric Society, February 17, on "The Future Equipment of Personnel in the Field of Mental Hygiene."

Centenary of Boston Medical and Surgical Journal.—At a banquet in the Hotel Somerset, Boston, February 18, the centenary of the *Boston Medical and Surgical Journal* was duly commemorated. The first issue appeared, February 19, 1828; the accompanying illustration is a facsimile of a portion of the cover, showing the first Massachusetts General Hospital. The president of the Massachusetts Medical Society, Dr. John M. Birnie, presided; the toastmaster was Dr. Homer Gage, Worcester, chairman of the committee in charge of the journal. The speakers included Drs. Joseph Garland, Boston; Walter P. Bowers, editor, Clinton; Frederick Cheever Shattuck, Edward W. Taylor and Robert M. Green, Boston; David W. Parker, Manchester, N. H.; William G. Ricker, St. Johnsbury, Vt.; Alexander D. Blackader, editor of the *Canadian Medical Association Journal*, and Morris Fishbein, who spoke on "Medical Journalism and the Boston Medical and Surgical Journal." With its next issue, the periodical will change its name to the *New England Journal of Medicine*, including also the states of Vermont and New Hampshire in its representations. Other guests at the centenary banquet were Drs. George W. Kosmak, New York; Dennis E. Sullivan, Concord, N. H., secretary of the New Hampshire Medical Society; Bertram Lewis Bryant, Bangor, Maine, secretary of the Maine Medical Association, and the various delegates and officials of the Massachusetts Medical Society.


THE
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NEW JERSEY

Osteopaths Cannot Be School Physicians.—The state commissioner of education has ruled that osteopaths cannot be appointed school medical inspectors in New Jersey by local boards of education because the law requires that a competent physician direct health work in the schools. The commissioner has therefore set aside the appointment of an osteopath by the Hasbrouck Heights Board of Education.

Society News.—Dr. David C. Bull, New York, addressed the Bergen County Medical Society on "Trends in Modern Surgery."——Elmer H. Brown, D.D.S., read a paper on "Oral Diagnosis" before the Mercer County Medical Society, January 11.——Dr. William L. Sneed, New York, spoke before the Passaic County Medical Society, January 12, on "Orthopedic Examination, Care and Treatment of Early Childhood."——The Burlington County Medical Society has appointed a committee to arrange for the celebration of its centennial next year; Dr. Reynold S. Griffith, Philadelphia, addressed the society, January 11, on "Diagnosis of Organic Heart Conditions."—— Dr. Arthur A. Landsman, New York, addressed the North Hudson Physicians' Association, Jersey City, January 30, on "Significance of Bleeding from the Rectum."

Testimonial to Dr. Morrison.—The dinner given recently by the Medical Society of New Jersey at the Waldorf-Astoria, New York, was in acknowledgment of the services of Dr. John Bennett Morrison to the society. Dr. Morrison, secretary for several years, has devoted a great deal of time to revivifying "the old organization" which, a speaker said, is the oldest medical society in the country (162 years). He, with other officers, has traveled many times over the state devoting an enormous amount of thought to organized medicine in New Jersey. The toastmaster was Dr. James J. Hunter, Jr., Westville. The speakers were Dr. Lucius F. Donohue, chairman of the arrangements committee and ex-president of the state society; Dr. James J. Walsh, New York; Dr. Henry O. Reik, editor of the *Journal of the Medical Society of New Jersey* and executive secretary of the society; Dr. Walter P. Conaway, president; Dr. Edward J. Ill and Dr. Morrison.

NEW MEXICO

Personal.—Dr. Guy W. Luckey, health officer in Bernalillo County and Albuquerque, has resigned to become health officer of Boone County, W. Va., succeeding Dr. William H. Enneis, formerly health officer of Union and Eddy counties. It is reported that Dr. Enneis has accepted an appointment at Knoxville, Tenn. Dr. James R. Scott, now in Berkeley, Calif., will return to his old position as health officer of Bernalillo County about April 1.

Malaria in Doña Ana County.—An outbreak of malaria amounting to 351 cases reported to the state health department occurred in Doña Ana County during 1927, which was an increase of 1,300 per cent over 1926; in 1926 there was an increase of 450 per cent over 1925. The county health officer, Dr. Charles W. Gerber, says in his annual report that prior to 1925 few, if any, cases of malaria occurred in the county. About fifty years ago, malaria was prevalent over a period of about five years. Malaria-carrying mosquitoes probably have always been present in the county, but in later years the drainage canals and the few undrained surface areas have made ideal places for the breeding of mosquitoes. The malaria-infested area is growing, cases appearing in scattered areas as far south as Mesquite. The heaviest infestation last year was in the Doña Ana Hill and West Picacho districts. Later in the season, the Rincon Valley reported cases from Hatch to Garfield. This was a severe form, while the variety found in the Mesilla Valley was the benign tertian type. The health officer recommends a plan to eradicate the malaria mosquito in this region, combining the use of top minnows and of larvicide, and the preventive and curative use of quinine. The state board of health will borrow $2,500 with which to inaugurate an antimalaria campaign. The estimated loss due to the presence of malaria from the cases that were reported last year was nearly $14,000.

NEW YORK

No Diphtheria Death in Almost Four Years.—The death of a 6 year old child, January 9, broke the exceptional record of the city of Auburn, which has not had any deaths from diphtheria since March 9, 1924. This child, according to *Health News*, had not been immunized against diphtheria; a physician was not called early in the disease, and antitoxin was not given until two days after his first call.

Society News.—Dr. John A. Kolmer, professor of pathology and bacteriology, University of Pennsylvania Graduate School of Medicine, Philadelphia, addressed the section of pathology of the Buffalo Academy of Medicine, February 22, on "Chemotherapy of Bacterial Infections"; Dr. William A. Evans, Chicago, will address a public meeting under the auspices of the academy, February 29, in the Hutchinson High School on "Achievements in Medicine in the Past Half Century."

Typhoid Victim Claims Damages.—The father of a girl, who, it is alleged, contracted typhoid in Cohoes last October, filed a claim of $5,000 for damages and $1,000 for the expense of the illness and the loss of his daughter's services. The girl is alleged to have contracted typhoid from drinking water from the city main in her home. There were said to be about forty-eight cases of typhoid reported in the same general vicinity which were supposed to have arisen from a cross connection permitting polluted water from a canal to enter into the city main at an industrial plant.

New York City

Personal.—Dr. Bruno S. Harwood has resigned from the city health department after twenty-four years' service, effective, April 10, and Dr. William C. Buntin will take over his office temporarily. A testimonial dinner was given to Dr. Harwood, February 6.

Dr. Penfield Goes to Montreal.—The *New York Medical Week* notes that after seven years' service as assistant professor of surgery at Columbia University College of Physicians and Surgeons, and also as neurologic surgeon at the

Presbyterian Hospital, Dr. Wilder G. Penfield will leave, March 1, to become professor of neurologic surgery at McGill University Faculty of Medicine, Montreal.

Society News.—The Medical Society of the County of New York will hold a symposium on nephritis, February 27; the speakers will be Drs. George Baehr, Nellis B. Foster, William W. Herrick, Henry G. Bugbee, Ben W. Key, John D. Lyttle, Walter L. Niles and I. Ogden Woodruff.——Dr. Jacques Forestier, Paris, addressed the Kings County Medical Society, February 21, on "Iodized Oil Injections as Aids in Diagnosis."

Hospital News.—Stony Wold Sanatorium is endeavoring to raise $250,000 for a new wing; among the speakers at the opening dinner, January 23, were George E. Vincent, Ph.D., president of the Rockefeller Foundation, and Dr. Linsly R. Williams of the National Tuberculosis Association.——The name of the Brooklyn Cancer Research Hospital has been changed to the Trinity Hospital.——Mount Sinai Hospital has opened its new $2,000,000 school and residence for nurses which will accommodate 490 nurses; it contains an infirmary of twelve beds and special suites on two floors for the faculty.——The Jewish Memorial Hospital has purchased a site at Broadway and One Hundred and Ninety-Sixth Street where a 200 bed hospital and nurses' home will be erected.

One Million Leaflets and 200 Talks on Measles.—Anticipating a biennial measles epidemic, the department of health, department of education, Metropolitan Life Insurance Company and New York Tuberculosis and Health Association, jointly, will conduct an educational campaign in which a million leaflets, describing the early symptoms of measles and urging prompt medical attention, will be addressed to parents and 200 talks by physicians given to school children and to parents. There will be twenty radio talks and a special leaflet sent to physicians; special service in measles cases by nurses; cooperation with the baby departments of a number of department stores, and publicity in newspapers. The campaign, the announcement notes, is to be similar to that carried out in Syracuse two years ago, which is said to have resulted in a reduction of 60 per cent in the mortality rate there in an epidemic year.

What Ambulance Surgeons Do.—According to the Hospital Information Service Bureau of the United Hospital Fund, an ambulance goes dodging through traffic in New York City every three and a half minutes each day of the year. The number of unnecessary calls for an ambulance in a year was 5,462; they are made by persons unable to estimate the extent of an injury and for accidents which do not require the attention of a physician. Aside from rendering service to the sick and injured, ambulance surgeons obtain an unusual experience in emergency work, as is shown in the tabulation of a year's ambulance calls:

Injuries

Abdominal injuries, 701	Dislocations:
Asphyxiation, 306	Upper extremity, 757
Bullet wounds, 624	Lower extremity, 574
Burns or scalds, 1,324	Dog bites, 802
Electrical burns, 70	Fractures:
Heat prostrations, 679	Skull, 2,088
Hernia, 592.	Upper extremity, 3,520
Lacerations, 20,545	Lower extremity, 4,154
Gas poisonings, 1,832	Shocks, 938
Cerebral concussions, 1,026	Sprains, 1,942
Contusions, 14,830	Wounds, 1,255
	Unclassified, 7,300

Diseases

Alcoholism, acute, 8,102	Acute hemorrhages, 817
Delirium tremens, 472	Hemorrhage of lungs, 286
Coma, 760	Stomach, 322
Convulsions, 888	Cerebral, 1,198
Diseases of the chest, 1,951; heart, 3,963	Hysteria, 1,976
	Insanity, 5,947
Intestine, 4,931	Infections, 2,808
Kidneys, 1,327	Labor, 4,416
Genito-urinary, 1,203	Pneumonia, 4,338
Erysipelas, 586	Pulmonary tuberculosis, 1,331
Epistaxis, 529	Unclassified, 22,694

NORTH CAROLINA

Life Extension Unit Formed.—The state board of health, with the cooperation of the International Health Board of the Rockefeller Foundation, has formed a life extension unit and placed Dr. Frederick R. Taylor, High Point, in charge to promote health work by physicians. If desired, the unit will assist in the development of the technic of periodic health examinations by examining physicians, dentists and members of their families. The new unit will not in any way compete with physicians in periodic health examination work but will attempt to promote the idea among the public.

Hospital News.—The Haywood County Hospital, Waynesville, said to be the first general hospital in the state supported by county funds, was opened recently. It is a three story, $100,000 structure, with a capacity of forty beds, an outpatient department, private rooms, wards, solariums and equipment of the most modern type. Various organizations have furnished rooms. At the opening exercises, the speakers were Dr. John T. Burrus, High Point, president of the Medical Society of the State of North Carolina, and Dr. Watson S. Rankin, Charlotte, formerly secretary of the state board of health.

Institute on Parental Education.—George E. Vincent, Ph.D., president, Rockefeller Foundation, New York, delivered his "first speech in North Carolina," February 14, before the North Carolina Institute on Parental Education, Raleigh, on "Children Versus Parents." The institute, the first of its kind in the state, gave an opportunity to parents and teachers to obtain scientific material which might be helpful in meeting child problems. Much of the program was devoted to the health of the child; among other speakers were Drs. Wilburt C. Davison, dean, Duke University School of Medicine, Durham; Charles O'H. Laughinghouse, Raleigh, secretary, state board of health; John T. Burrus, High Point, president, state medical society, and George W. Kutscher, Jr., Black Mountain. Governor McLean presided at some of the sessions.

OHIO

Survey of Atmospheric Dust.—The weather forecaster at Cincinnati received information, January 27, to the effect that the U. S. Weather Bureau in cooperation with the American Society of Heating and Ventilation Engineers will conduct a survey of the dust content of the atmosphere in selected cities and that special instruments would soon be shipped to Cincinnati for that purpose, as well as instructions and forms on which to record the measurements and forward them to Washington. According to the Cincinnati *Enquirer*, this investigation was undertaken as the result of inquiries from all parts of the country following publication of a news item in THE JOURNAL, January 7, on "Dust in Air of Cities."

Society News.—Twenty-four members of the Travelers' Club of the Lima Academy of Medicine went to the University of Montreal, February 11, on "their fifth annual tour" to attend clinics.——Dr. Henry J. Gerstenberger, Western Reserve University School of Medicine, Cleveland, addressed the Summit County Medical Society, Akron, February 7, on "Studies in Rickets and Spasmophilia."——The Logan County Medical Society, Bellefontaine, was addressed, February 3, on "The Treatment of Syphilis." The speakers were Drs. Clyde K. Startzman, Bellefontaine; Robert B. Pratt, Bellefontaine; Alfred E. Jones, Belle Center; Clarence N. Miles, D.D.S.; Samuel L. Zurmehly, Rushsylvania; Frank R. Makemson, Bellefontaine; Van F. Barrett, Lakeview, and Arthur J. McCracken, Bellefontaine.

Personal.—Dr. Charles O. Probst tendered his resignation, January 14, as medical director of the Columbus Tuberculosis Society after twenty-one years of service.——Dr. Andre Crotti has been elected chief of staff of White Cross Hospital, Columbus, for the ensuing year.——Dr. Julius Shamansky has been appointed health commissioner of Mount Vernon to succeed Dr. Irvin S. Workman, resigned.——Drs. Marion A. Blankenhorn and Roy W. Scott have been promoted from associate professors of medicine to professors at Western Reserve University School of Medicine, Cleveland.——Dr. William D. Inglis has been elected president of the board of health of Columbus succeeding Dr. Wells Teachnor, whose term expired.——Dr. Wilbur G. Carlisle has been named city health commissioner of Bucyrus to succeed the late Dr. Arthur H. McCrory, who held the position for many years.——A dinner was given recently by physicians at the University Club, Cincinnati, in appreciation of the long service to the community of Dr. Thomas V. Fitzpatrick, who was presented with a traveling bag.——Dr. Frank Warner was guest of honor at a testimonial dinner, February 8, given by the staff of White Cross Hospital, Columbus, in recognition of his thirty-five years of service for the hospital.

PENNSYLVANIA

Society News.—At a meeting of the Allegheny County Medical Society, Pittsburgh, February 21, Drs. Albert A. Bornscheuer read a paper on "Progress in Plastic Surgery"; Thomas W. Grayson, "Dietetics"; Voigt Mooney, "Painful Backs—Some Anatomic Causes with Also the Development and Symptomatology of Osteartheritis of the Spine," and Curtis S. Foster, "Ureteral Strictures."——Dr. Joseph V. Klauder, associate professor of dermatology and syphilology, University of Pennsylvania Graduate School of Medicine, addressed the Berks County Medical Society, February 14,

on "Some of the Commoner Aspects of Skin Diseases and Their Relation to the General Practitioner"; the March meeting of the society will be addressed by Dr. Frederick M. McPhedran, Philadelphia, on early diagnosis of tuberculosis. ——Dr. Edward L. Bauer, professor of pediatrics, Jefferson Medical College, and president of the Philadelphia Pediatric Society, addressed the Northampton County Medical Society, Easton, February 17, on "Latest Aspects of Scarlet Fever, Its Prevention and Treatment."——Dr. William Lintz, New York, held a clinic at the hospital at Scranton and addressed the Lackawanna County Medical Society, February 23, on "The High Blood Pressure Problem."

Philadelphia

Personal.—Richard A. F. Penrose, Jr., Ph.D., has resigned from the board of trustees of the University of Pennsylvania. ——Dr. George E. de Schweinitz, formerly President of the American Medical Association, addressed the Undergraduate Medical Association of the University of Pennsylvania, January 20, on "Remarks Concerning the Medical Student's Relation to His Work."

Resolution About Removing Tonsils.—Following a recent discussion of the "tonsil problem of the aged" at a meeting of the Philadelphia Laryngological Society, "sensational notoriety" is said to have been given to a method of removing tonsils by electrocoagulation or desiccation which was advocated by a member during the discussion. The society has since passed a resolution stating that it does not officially endorse the method nor approve the publicity given the matter, and that it disclaims all responsibility for opinions expressed in the discussion on removal of tonsils by this method.

Society News.—Dr. William G. Shemeley, Jr., addressed the Philadelphia Laryngological Society, February 8, on "Basilar Skull Fracture Involving the Left Temporal Bone," and Dr. William Hersey Thomas addressed the Philadelphia Clinical Association on "Obstructive Uropathy."——Among others, Drs. Walter E. Lee, Louis H. Clerf and Gabriel Tucker gave a moving picture demonstration of postoperative massive atelectasis of the lung before the joint meeting of the New York Surgical Society and the Philadelphia Academy of Surgery, February 8; Drs. Charles H. Frazier spoke on "Bilateral Operations for Pituitary Lesions," and John B. Deaver on "Closure of Prostate Bed Following Prostatectomy."——Dr. John F. Sinclair addressed the Philadelphia Pediatric Society, February 14, on "Massive Atelectasis Accompanying Acute Suppurative Bronchitis."——Prof. Henry F. Osborn, Ph.D., New York, addressed the medical history section of the Philadelphia College of Physicians, February 21, on "Recent Discoveries Concerning the Ancestry of Man," and Dr. Charles N. B. Camac, New York, on "The Edwin A. Smith Papyrus."

VIRGINIA

Bill Introduced.—Senate bill 173 provides for the repeal of the law allowing the licensing of practitioners of poropathy.

Personal.—Dr. Joseph H. Hiden, Pungoteague, was awarded the first prize offered through *Southern Medicine and Surgery* for the best paper on "How the Family Doctor Can Increase His Usefulness and His Income." The contest was open to any reputable physician in Virginia or the Carolinas, and forty-two essays were submitted.——Dr. James M. Habel, Jetersville, rescued three children and an aged woman, recently, from a burning house while the owner and his wife were at church.——The February *Virginia Medical Monthly* notes the names of seventeen physicians in Virginia who are members of boards of directors of Virginia banks.

GENERAL

Grants to Aid Research on Clinical Medicine.—The Committee on Scientific Research of the American Medical Association invites applications for grants in aid of research on problems bearing on clinical medicine. Inquiries may be addressed to the committee, 535 North Dearborn Street, Chicago.

Another Four Weeks of Automobile Accidents.—In the four weeks ending January 28 in seventy-six large cities of the United States, automobile accidents were responsible for 528 deaths, as compared with 469 during the corresponding period of last year. Eight cities reported no deaths from automobile accidents in the last four weeks, while fourteen cities reported no deaths during the corresponding period last year.

Professor Bauer of Vienna to Lecture.—Dr. Julius Bauer, professor of medicine, University of Vienna, and physician in chief to the Polyclinic, will deliver several lectures and also the convocation oration before the American College of Physicians at the meeting in New Orleans, from March 5 to 9. Professor Bauer's most noteworthy contributions to medical literature are his lectures on "Constitution and Inheritance for Students and Physicians," his book on "The Constitutional Disposition of Internal Disease," and his latest work on "Internal Secretions."

Offer of Large Prize for Cancer Cure Extended.—The managing director of the American Society for the Control of Cancer, George A. Soper, Ph.D., announced, February 2, that the offer of $100,000 for the discovery of methods for the prevention and cure of cancer by William Lawrence Saunders which expired will be extended until Feb. 1, 1929, or longer, following the suggestion of Mr. Saunders. The 3,158 applications received and those still coming in will be submitted to a reference board of five authorities on cancer who will study them for possible leads to new methods of attack on cancer. Many of the letters were from persons who had no scientific training, and none of the applications have revealed any process that warrants giving up the methods of treatment now recognized by the medical profession. Dr. Soper pointed out that the society will not only investigate new methods suggested but will also inform the public of the worthlessness of some popular remedies.

The Meat Situation.—There was a decline of 3½ pounds in the per capita consumption of meats in 1927, in the United States, according to the department of agriculture. The total production of meat in the United States declined 373,000,000 pounds during the year. This, it is said, was entirely the result of the restricted supply of beef, notwithstanding an increase of 352,000,000 pounds in the pork supply. The exports of meat fell off, but the imports of meat into the United States, which are, as a rule, only a drop in the bucket compared to the total supply, have increased in the last two years, amounting in 1927 to less than 1 pound per head of population. The beef cattle situation presents the anomalous condition of a constantly dwindling herd supply each year. Slaughter figures show a gradual rise from 1921 to the high record of 7,458,000,000 pounds in 1926, while in this period the total number of beef cattle in the country diminished almost 10,000,000. Such a paradox, the report notes, cannot continue, for instead of getting our beef from the natural increase of the herd, we are consuming the herd itself. The production and consumption of veal in 1927 followed a similar trend to that of beef, although less pronounced. There has been a slight increase each year in the production totals of lamb and mutton since 1922. Pork production swung upward in 1927 after a moderate decline in the two previous years from the high peak of production in 1924. The per capita consumption in this country in 1927 of pork, exclusive of lard, was 68.5 pounds; of lamb and mutton, 5.4 pounds; of veal, 7.4, and of beef, 58, a total meat consumption of 139.3 pounds. The per capita consumption of lard was 13.8 pounds.

Dr. Coolidge Announces 900,000 Volt Tube.—William D. Coolidge, Ph.D., of the General Electric Company announced, February 15, on the occasion of the presentation to him of the Edison Medal, the production of a triple-cascade cathode ray tube operating on 900,000 volts and capable of sending out into the air a stream of electrons with a velocity of 175,000 miles per second. The result was made possible by the cascade arrangement, whereby rays from one tube are fed into another which speeds them up and feeds them along to still another. The new tube is about 95 inches long and has three bulbs each 12 inches in diameter. A heated tungsten filament, originally used by Dr. Coolidge in his roentgen-ray tubes, furnishes the supply of electrons. "This cascade or multisectional system," Dr. Coolidge said, "promises to let us build vacuum discharge tubes for as high voltages as we can produce. . . . This applies as well to an x-ray tube as to a cathode-ray tube, as the latter may be converted into the former by the addition of a suitable target. This opens a vista of alluring scientific possibilities. According to Sir Ernest Rutherford, we need only a little more than twice the voltage which we have already employed to produce x-rays as penetrating as the most penetrating gamma rays from radium and 3,000,000 volts to produce as high speed beta rays. We expect to find that a high voltage positive ray tube can be constructed along the general lines of the multisectional cathode ray tube, in which case, according to Rutherford, about 8,000,000 volts would be needed to produce positive rays having the energy of the highest velocity alpha rays from radium." Just what the use will be for these high speed particles obtained from the new tube is still a problem, Dr. Coolidge says. "We will experiment with them. It is not unlikely that therapeutic, chemical, bactericidal and other practical uses will develop."

Effort to Improve Health of Children.—The Commonwealth Fund, New York, expended $1,100,000 last year to improve the health of American children, and made gifts to hospitals and welfare work which brought the total appropriation to $1,953,557. Demonstrations in child health are being conducted in Rutherford County, Tennessee, Athens, Ga., Marion County, Oregon, and a five-year demonstration at Fargo, N. D., was completed. The program for the development of child guidance clinics, visiting teacher work in the public schools and projects in mental hygiene required $697,000. This five year period of demonstrations and consultant service has resulted in establishing clinics for children's behavior problems in Cleveland, Philadelphia, St. Louis, St. Paul, Minneapolis, Dallas, Baltimore, Richmond, Milwaukee, Los Angeles and Pasadena. The fund aided in establishing in New York last year an institute for child guidance fully equipped for research and practical work, and providing training for psychiatrists, psychologists and psychiatric social workers. The fund is administering fellowships for British graduate students in American universities, and for the maintenance of these fellowships last year $175,000 was appropriated. The fund appropriated $414,000 for the development of rural hospitals during the year, making awards to Farmington, Maine; Beloit, Kans., and Wauseon, Ohio. Miscellaneous grants, totaling $182,000, were made to various organizations, including the American Society for the Control of Cancer, the American Conference on Hospital Service, the New York Tuberculosis Association, the Welfare Council of New York City and other health and welfare agencies. The Commonwealth Fund was established in 1918 as a general philanthropic foundation with an initial gift of $10,000,000 from the late Mrs. Stephen V. Harkness. This was increased during her lifetime by other donations. The capital endowment now amounts to $38,000,000. The income of the fund last year was $2,129,748.

LATIN AMERICA

Lectures at School of Tropical Medicine.—William H. Taliaferro, Ph.D., professor of parasitology, University of Chicago, arrived in San Juan, P. R., January 9, to be the guest of the University of Porto Rico until April 1. He will give a course in protozoology at the school of tropical medicine and carry on immunologic studies in parasitic diseases. During January, Oscar Riddle, Ph.D., of the Carnegie Station for Experimental Evolution, Cold Spring Harbor, N. Y., gave six lectures at the school of tropical medicine, San Juan, on "Internal Secretion in Evolution and Reproduction" and "Control and Transformation of Sex in Animals."——Dr. F. W. O'Connor, assitant director, division of medical education, Rockefeller Foundation, recently gave a series of lectures at the School of Tropical Medicine at San Juan, P. R., on filariasis and amebic dysentery.

Meeting in Memory of Dr. Carlos John Finlay.—In connection with the sixth International American Conference, Havana, Cuba, February 17, exercises in honor of the late Dr. Carlos John Finlay were held in the building of the Secretaría de Sanidad y Beneficencia. Dr. Ray Lyman Wilbur, president of Stanford University, formerly President of the American Medical Association, and a member of the United States delegation to the conference, gave an address. He said that the knowledge of the transmission of yellow fever through the mosquito, which was first suggested by Dr. Finlay, together with that on the control of malaria, plague, cholera, typhoid and smallpox, has done more to mold the future of our race in this hemisphere than any other one thing; and that Dr. Finlay was one of those pioneers who see a way through the tangle of the known and unknown by the use of careful, thorough observation. He had what Pasteur called the "prepared mind" or he would not have been one whose work mapped the way for others to build the safe highway of today with the experimental work carried on in the neighborhood of Camp Columbia by Reed, Carroll, Lazear and Agramonte. Dr. Finlay was born in Cuba in 1833, the son of a physician; he practiced in Havana and was a delegate from Cuba to the International Sanitary Conference in Washington, 1881, in which year he promulgated the theory that yellow fever was conveyed from man to man by mosquitoes; after the withdrawal of the United States troops from Cuba in 1902, he succeeded Gorgas as chief health officer of Cuba. He was a thoughtful and kindly enthusiast. Having seen his theory established, Dr. Finlay lived modestly without further thought of recognition and died in 1915.

Government Services

Officers Retired and Ordered Up

Majors Lloyd E. Tefft, Jirah M. Downs, Allen J. Black and Edmund W. Bayley, having been found by a retiring board incapacitated for active service on account of disability incident thereto and such findings having been approved by the president, their retirements under the provisions of section 1251, revised statutes, are announced.——Capt. Harry Wall has been ordered to report to the president of the army retiring board, Washington, D. C.——Capt. John H. Trinder has been ordered to report to a retiring board at Chicago for examination.——Major Charles L. Banks will report for examination to an army retiring board at the Presidio, San Francisco.

Navy Personals

Comdr. Ralph T. Orvis, who will complete thirty years' service, June 10, has applied for retirement.——Lieut. Comdr. Page O. Northington has tendered his resignation from the service.——The following officers have been ordered in attendance on a course of instruction in internal medicine at the Massachusetts General Hospital beginning March 1: Capt. Robert E. Hoyt; Comdr. Renier J. Straeten; Lieut. Comdrs. William W. Wickersham, William W. Hargrave and Stephen R. Mills, and Lieut. Clyde W. Brunson.——Lieut. Comdr. Fenimore S. Johnson and Lieut. James E. Root, Jr., have been ordered in attendance on a course of instruction at the New York Post-Graduate Medical School and Hospital for a period of one and three months, respectively.——Lieut. Norman J. Haverly has been found qualified for promotion to the rank of lieutenant commander.

Foreign Duty Personals

Major Herbert C. Neblett will sail for New York about May 16 to the Philippine Islands for duty.——The following officers will sail for the Philippines about June 8: Major John Dibble, Capt. Charles A. Stammel, and Lieuts. Mack M. Green, Verner E. Ruedy, William E. Shambora and Arthur B. Welsh.——Lieut. Cecil W. Dingman will sail from San Francisco about June 9 for duty in the Hawaiian Department.——Capt. Ray H. Skaggs will sail from New York about June 2 for Porto Rico for duty.——Lieut. Bennie A. Moxness will sail from San Francisco about June 6 for duty in the Canal Zone.——Capt. James H. Blackwell has been relieved from assignment at San Juan, P. R., on completion of his tour, and assigned to the medical field service school, Carlisle Barracks, Pennsylvania.——Major John W. Sherwood will sail from New York about June 2 for the Canal Zone for duty.

U. S. Public Health Service

Special Consultant Jay F. Schamberg, Philadelphia, was directed, January 14, to proceed to Hot Springs, Ark., and return in connection with venereal disease control measures.——Surg. Norman Roberts has been relieved from duty at Washington, D. C., and assigned to Ellis Island, New York.——Asst. Surg. Franklin J. Halpin has been assigned to duty with the U. S. Employees Compensation Commission, Washington, D. C.——Surg. Allan J. McLaughlin was directed to proceed from St. Louis to Chester, Ill., and return in connection with an investigation of a case of alleged leprosy.——Asst. Surg. Alfred J. Aselmeyer has been relieved from duty at Naples, Italy, and assigned to Warsaw, Poland; Asst. Surg. Jacob P. Eberhardt goes from Savannah, Ga., to marine hospital number 6, Cleveland, and Asst. Surg. Homer L. Skinner from Ellis Island, N. Y., to Savannah, Ga.——Dr. Maurice A. Roe has been commissioned in the class of assistant surgeon, effective the date of oath.——Acting Asst. Surg. Louis E. McCanna has been relieved from duty at Washington, D. C., and assigned to the U. S. Bureau of Mines Clinic, Picher, Okla.——Asst. Surg. John R. Murdock has been relieved from duty at Seattle, Wash., and assigned to marine hospital number 9, Fort Stanton N. M.——Surg. George W. McCoy has been directed to proceed to Honolulu in connection with studies of leprosy.——Asst. Surg. Ernest E. Huber has been assigned to duty at the hygienic laboratory, Washington, D. C., effective, January 16.——Asst. Surg. L. R. White has been assigned to duty at marine hospital number 7 of New York.——Asst. Surg. Albert S. Irving has been assigned to duty at Washington, D. C., with the U. S. Coast Guard.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 28, 1928.

The Lowest Birth Rate on Record

The vital statistics for 1927, which have just been published, show once again the lowest birth rate on record. The birth rate for England and Wales is 1.1 per thousand below that of 1926, the lowest rate recorded since the establishment of civil registration. The death rate is 0.7 per thousand above that of 1926, the excess being due to the high mortality of the first and fourth quarters of the year. The infantile mortality rate for England and Wales is equal to that of 1923, the lowest on record; the rate in 1926 was 70 per thousand births. The decline in the birth rate is shown in the following table:

Birth Rates per Thousand of Population

1917	17.8	1923	19.7
1918	17.7	1924	18.8
1919	18.5	1925	18.3
1920	25.5	1926	17.8
1921	22.4	1927	16.7
1922	20.4		

It will be seen that the "war figures" are now considerably higher than the peace-time figures. The following figures show how the reduction in the death rate has been maintained:

Death Rates per Thousand of Population

1917	14.2*	1923	11.6
1918	17.3*	1924	12.2
1919	14.0*	1925	12.2
1920	12.4*	1926	11.6
1921	12.1	1927	12.3
1922	12.8		

* Civilians only.

The following table shows the remarkable fall in the infant death rate which has taken place since the beginning of the present century:

Deaths of Infants Under One Year per Thousand Births

1896	148	1912	95
1897	156	1913	108
1898	160	1914	105
1899	163	1915	110
1900	154	1916	91
1901	151	1917	96
1902	133	1918	97
1903	132	1919	89
1904	145	1920	80
1905	128	1921	83
1906	132	1922	77
1907	118	1923	69
1908	120	1924	75
1909	109	1925	75
1910	105	1926	70
1911	130	1927	69

Cremation in Great Britain

The secretary of the Cremation Society of England has issued a statement concerning the progress of cremation in Great Britain. Although this form of burial is not gaining ground so rapidly in this country as in Czechoslovakia, Switzerland or Germany (where no less than eighty-one crematoriums are now in operation and the annual number of cremations is approximately 45,000), the figures for Great Britain indicate that this method of disposal of the dead is steadily becoming more general. As the metropolitan burial grounds are becoming exhausted and fresh ground for burial purposes is difficult, if not impossible, to acquire, a much more rapid increase may be looked for in the near future. The provision of crematoriums is being considered by the local authorities in all parts of the country and establishments have been authorized by several. The number of cremations in Great Britain has increased from 1,986 in 1923 to 3,266 in 1927.

The Saints of Medicine

To a large and distinguished company who attended a reception at the Royal Society of Medicine, Dr. Jane Walker delivered an address on "Saints, Medicine and Surgery." She said that St. Luke had always been regarded as the patron saint of physicians. But she feared that as a physician St. Luke was now discredited. His gospel had been most carefully examined from the medical point of view and was declared to show no signs of any special medical skill or knowledge. It was, however, rather like a physician, she admitted, not to mention the fact that the poor woman who was miraculously healed had spent all her money on physicians and was nothing the better for it—a fact duly recorded in the other two synoptic gospels. Two other patron saints of the medical profession were St. Cosmo and St. Damian, who figure in the new coat of arms of the Royal Society of Medicine. In choosing them as supporters of the coat of arms the society had formed a link with the past, for these two saints were the patrons of the ancient guild of barber-surgeons, and effigies of them are found on the exquisite silver-gilt instrument case of this guild. Tradition, according to Dr. Walker, had credited different saints with the power of healing almost every disease known to the Middle Ages, from pestilence to toothache. The faith with which their powers were regarded was shown by the practice still extant of hanging ex-votos on their images and pictures in churches. Among the exhibits on view illustrating the subject of the lecture, was a collection of ex-voto offerings lent by the Wellcome Historical and Medical Museum.

The Hunter Bicentenary

The bicentenary of the birth of John Hunter, anatomist, comparative anatomist, physiologist and founder of scientific surgery in England, will be celebrated, February 14. A year ago the president of the Royal College of Surgeons, Sir Berkeley Moynihan, paid a tribute to Lister, whose centenary it was, and in bracketing the two names Hunter and Lister he said that they stood apart from all other men by reason of the innumerable gifts which they had conferred on mankind. This year the Hunterian Oration will be delivered by Sir Holbert J. Waring, surgeon to and joint lecturer in surgery at St. Bartholomew's Hospital. In the evening the festival dinner of the Hunterian Society will be held. The bicentenary celebrations also include a reception at the Royal College of Surgeons, February 16, followed by the Thomas Vicary lecture on "The Homes of Hunter" by Mr. G. C. Peachey. During the commemoration week there will be a special display of hunterian specimens at the college arranged by Sir Arthur Keith, and a number of hunterian relics will also be shown by Mr. Plarr, the librarian. Wreaths will be placed by representatives of the surgical and medical professional bodies on Hunter's tomb in Westminster Abbey.

Law and Medicine

At the annual dinner of the Medico-Legal Society Mr. Justice McCardie, in submitting the toast "The Medico-Legal Society," said it would be deplorable if there should be in the future any antagonism of feeling between law and medicine. There were two things that, he felt, might lead to an antagonism of feeling. One was the question of insanity, which had created acuteness of controversy in many quarters (THE JOURNAL, Jan. 7, 127, p. 42). He did not believe in a law which was unprogressive. He did not think that the social and the scientific philosophy of 1927 was the same as

the social and scientific philosophy of 1843. When such a subject as insanity was discussed, certain broad features were sometimes overlooked. Insanity was always treated by writers in the press from the point of view of murder. He had never seen it discussed from any other aspect. But it touched questions of theft, forgery and assault, and there was in the question of insanity a far broader matter than was considered by many people who wrote about it. The other matter related to medical secrecy. There were two aspects of the question, each of which was vital. There was the physician who said, "Health, health, health, and break down the legal obstacles that prevent the gain of health." Yes, but there was another point of view—and there was not a lawyer whose heart was not stirred—and that was "Truth, truth, truth; open the shutters and let in the full light of truth." Truth lay at the root of criminal justice.

Physician's Motorcar Not an "Ambulance"

A physician was summed at Highgate police court for driving his motorcar at 35 miles an hour. He pleaded that he should be excused for his speed, as ambulances were excused, because he was called out to an urgent case. The patient wrote to the court that he was in great pain after an operation, and could obtain but little sleep without the help of drugs. He asked his wife to call the physician to attend as quickly as possible. The physician was fined $15.

Local Patients Kept Out of Hospitals by Motoring Victims

The number of motor accidents has become so great as to constitute a special problem for hospitals. Mr. J. C. Buchanan, secretary of the British Hospitals Association, said in the press that the question of the effect of the growth of motoring on the finances of hospitals has been engaging the attention of the British Hospitals Association for the last few months. "Hospitals throughout the country are overcrowded with injured patients from other parts. In many cases patients are unable to secure beds in the hospitals which their district supports because they are full up with people from other places. We are considering the question of securing an amendment of the law to enable voluntary hospitals to include, in their expenses, statements of claims arising from motoring accidents."

Clinics for Rheumatism

The importance of rheumatism as a cause of disability, and a scheme by which it can be arrested in its early stages by special clinics near the homes and factories of the workers, were dealt with at a meeting held under the auspices of the British Red Cross Society. A sum of $250,000 is required in London to establish the first special clinic. Here it is proposed to treat chronic rheumatism by radiation, ultraviolet rays and electric treatment, in addition to baths and massage. Sir William Willcox said that the ministry of health had established the fact that one sixth of the total absence through sickness of industrial workers was due to rheumatic diseases. It was the common experience that every one suffered in some way from rheumatism, and it was now established that the disease was due to germ infection. The resistance of the patient had its effect on the incidence of the disease, and good food in sufficient quantity and a properly balanced diet, sunlight, fresh air and good housing all had their effect. The treatment of rheumatism was, therefore, a very big problem. By means of these clinics it would be possible to examine further the causes of rheumatism and set the treatment on a proper basis. A large number of these rheumatic patients would get well very quickly under proper treatment. The experience of Germany and the continent showed that the waste from sickness was considerably cut down by early attention to the disease. With further investigation the more severe forms could be checked, and perhaps ultimately made impossible.

Fatal Portmortem Examination Without Gloves

The danger of conducting a postmortem examination without gloves was referred to during an inquest on the body of Surgeon Rear-Admiral Sir Percy Bassett-Smith, aged 66, a distinguished officer and well known authority on tropical diseases. As a member of the staff of a hospital he performed a postmortem examination without gloves. Death was due to septic pneumonia following septicemia, said to have been due to infection from the examination.

NETHERLANDS

(From Our Regular Correspondent)

Dec. 24, 1927.

The International Conference of Eugenics

During the sessions of the Fédération internationale d'eugénique et d'anthropologie it was decided to create a research commission charged with studying the eugenic and dysgenic effects of the World War. This group will comprise an economist, a statistician, a physician and a biologist.

The scientific assembly was devoted to the study of cross-breeding in human races and to a discussion of Galton's principles of heredity. The question of cross-breeding was considered successively from the biologic point of view by Nilhsson-Ehle, from the anthropologic angle by Davenport, and from the social standpoint by Myoen. Biologically, the crossing of species plays a considerable rôle in the determination of characters and in the appearance of hereditary variations. With regard to man, the problems can merely be stated as yet; their solution involves great difficulties and numerous uncertainties. They appear to present an interest that is more theoretical than practical, but their study will aid nevertheless in the comprehension of certain peculiarities of races. In certain peoples that are still of pure stock and in certain mixed races, one will find an extensive field of observation. In any event, the aspects of the problem are peculiar to each nation.

The second topic, Galton's law, was treated by Major L. Darwin and Dr. Govaerts. According to these two papers, the interpretation of eugenics which is most conformable to Galton's ideas and which does not endeavor to outstrip our knowledge of today is that which regards the doctrine as embracing an act of society that permits the family lines that are best endowed to reveal themselves, to develop, to increase the number of their descendants, and to protect themselves against all possible causes of a weakening of the ancestral stock.

Dedication of the Faculty of Medicine in the Dutch East Indies

Reference was made recently to the modifications that were being made in instruction in medicine in the Dutch East Indies, and particularly to the transformation of the old medical school into a modern faculty of medicine. The dedication of the latter took place in the presence of the governor general representing the queen of the Netherlands. The governor recalled in his address that within seven years three large institutions of higher instruction had been opened: the polytechnic school, the Faculty of Law, and the Faculty of Medicine.

Industrial Medicine

The bill pertaining to the creation of industrial, or factory, physicians is now being considered. The principal points involved are the following: An industrial medical service must be under the direction of a physician recognized officially as an industrial, or factory, physician. The service must be organized entirely at the expense of the industrial establishment. The industrial physician will give first aid in case of

accident and may continue the treatment, provided the patient does not express a preference for some other physician. Control of the period that the patient must remain away from work and also estimation of the degree of disability may be placed in the hands of the industrial physician. The Nederlandsche Maatschappij tot Bevordering der Geneeskunst advocates a complete separation of these duties from those of the attending physician. That society recommends also more definite guarantees of free choice of physician on the part of the person ill or injured than are contained in the bill under consideration.

Goiter in the Netherlands

Prof. Otto Lanz has published an article on goiter in general, giving likewise observations on conditions in the Netherlands. The region about Utrecht presents the largest number of goiters. The incidence is much higher in the city than in the rural districts. Another inquiry carried out by Roux and bearing on 50,000 soldiers has shown that goiter in the Netherlands is localized more particularly in the regions adjoining the large rivers (the Rhine and the Yssel). Goiter is not endemic but sporadic, in the Netherlands. It is most frequent in the 10-20 age group, occurring especially in young girls at the time of puberty. As a rule, it is a question of diffuse goiters with hyperfunctioning of the thyroid. Goiter due to hypothyroidism is not common in the Netherlands. The cretins encountered do not ordinarily present any tumefaction of the thyroid; on the contrary, glandular atrophy is the rule. Under these conditions, general prophylaxis through the administration of iodine is almost useless.

Prizes for Researches on Tuberculosis

In 1925, the queen of the Netherlands offered prizes for the best researches on tuberculosis mortality in a definite group of the population of the Dutch East Indies, the subject to be considered from both the clinical and the bacteriologic point of view. Five papers were sent in, two of which were awarded prizes. The first prize was given to Dr. O. Paneth, government physician at Kaban Djake, who made a special inquiry affecting 2,600 persons residing in six cities, more than 200 of whom were found to be affected with tuberculosis.

A Dental Clinic

The stomatologic association of Amsterdam has opened a cooperative clinic, the purpose of which is to support a publicity campaign in favor of dental hygiene among those who cannot afford private dental treatment. The fees charged in this cooperative clinic will be determined by the overhead expense.

The Crusade Against Malaria

The annual report of the Scientific Committee for the Campaign Against Malaria shows that in addition to the application of petroleum to stagnant waters, experiments have been made with paris green, a solution of which is employed as a fine spray that contains also calcined magnesia in the relation of 1 : 100. Ten cc. of this mixture suffices to spray effectively 1 square meter of territory. This solution is frankly larvicidal, although it has no toxic action on insects and vegetation.

A New Laboratory of the Public Health Service of Amsterdam

The communal public health service of Amsterdam has opened a laboratory of clinical research, which will be at the disposal of not only the physicians of the communal services but likewise of all practitioners of the city. All current forms of bacteriologic research will be carried out. A special section of the laboratory will be devoted to questions of school hygiene. A section of biologic and technical hygiene will deal with questions pertaining to drinking water, the removal of dirt and rubbish, the purification of waste waters, and like problems.

Death of Prof. W. Einthoven

W. Einthoven, the learned professor of the Faculté de médecine of Leyden, has died. His galvanometer together with his researches on cardiology placed him in the front rank in the field of cardiac physiology.

RIO DE JANEIRO

(From Our Regular Correspondent)

Jan. 15, 1928.

Serum Prophylaxis of Measles

Dr. Fernandes Figueira reported to the National Academy of Medicine his experience in a measles epidemic in a children's home. Thirty-six inmates were already attacked and six were considered as suspicious. Twenty-one were treated with convalescents' serum. Only two of these developed the disease in a modified form three days after injection.

Molds in Pulmonary Tuberculosis

Drs. J. M. Gomes and C. Correa reported to the Sãó Paulo Biologic and Health Society the first study of a series. Among twenty-six sputum specimens from tuberculous patients, smear examinations disclosed the presence of fungi in fifteen. Samples were then planted first in acid broth (two hours at 37 C.) and then in Sabouraud's gelose. Only nine of the twenty-six specimens proved negative as to fungi. A study in sugar mediums failed to disclose any two organisms that were alike. Castellani's classification based on carbohydrate fermentation seems deficient unless merely used for molds with well established characters.

A Cardiac Type of Chagas' Disease

At the National Academy of Medicine, Dr. Carlos Chagas described the cardiac form of American trypanosomiasis (Chagas' disease). The cardiac manifestations may consist in acute or chronic parenchymatous or interstitial myocarditis. This differentiates the condition from that caused by syphilis. The patients exhibit more or less cardiac weakness, effort dyspnea, palpitation, dizziness. Other signs are enlarged heart, decreased arterial pressure, variable irregularities of the pulse and finally asystole. In complicated cases no renal lesions or general arteriosclerosis are found. Death often occurs suddenly, but the course may also assume a more gradual downward character. At the outset extrasystoles, widely spaced in time, predominate until tachysystolia, auricular fibrillation and permanent slow pulse develop. Chagas reported a new case in a man, aged 40, with total arrhythmia, and auricular fibrillation, who died suddenly while at complete rest. Necropsy disclosed a frank ventricular fibrosis and auricular inflammatory exudate with a clear-cut mononucleosis. The parasites were found in the right atrial wall.

Roentgenography of the Lesser Interlobar Fissure

Dr. M. de Abreu lectured before the Rio medical society on the roentgenographic shadow of the lesser interlobar fissure. This horizontal fissure appears neatly in roentgenograms and especially teleroentgenograms from an anterior or right and preferable left anterior oblique angle. It may be readily detected in about 50 per cent of cases; in the remainder it is sufficient to irradiate downward at a 15 to 20 degree angle. In some cases the fissure is hard to locate, as it describes a rather marked curve. The roentgenographic location does not quite agree with that given in textbooks of anatomy. The dying exhalation and pulmonary retraction change the position in the cadaver. The detection of this fissure permits a better study of fissural retraction in cases

of pulmonary fibrosis and to verify the degree of the fibrous changes. A pathologic fissure exhibits an increased thickness. It is also more irregular because of pleural induration and parenchymatous fibrosis. Its shadow is thus denser. The greater interlobar fissure may assume a similar appearance, rarely from an anteroposterior angle but often from an anterior oblique position. A view from the left may thus bring into sight both the greater and the lesser interlobar fissures.

ITALY

(From Our Regular Correspondent)

Dec. 21, 1927.

The Congress of Surgery

The Società italiana di chirurgia held its thirty-fourth congress in Parma, under the chairmanship of Professor Ferrari.

RESISTANCE TO OPERATION—OPERATIVE RISKS

The first main topic on the program, "How May the Resistance of Patients to Be Operated on Be Evaluated and the Operative Risks Diminished?" was presented by Professor Fasiani of Padua and Professor Torraca of Modena. It is more particularly in those for whom operation is a matter of choice that the preoperative evaluation of individual resistance is of decisive importance. Since the discovery of insulin, the surgical risk in diabetic subjects has been improved and the prognosis of infectious and gangrenous complications has been better. It is important to establish the acid-base equilibrium of the patient to be operated on, for it has been observed that anesthesia reduces the carbon dioxide content of the blood from 10 to 15 per cent by volume. Functional capacity and the reserve force of the heart should be evaluated. Valvular defects, if not associated with lesions of the myocardium and if well compensated, are not usually dangerous. Auricular fibrillation should be treated, and the treatment should be controlled with the electrocardiograph. Arterial hypertension, if compensated, is not a contraindication to operation, provided the kidneys are functioning sufficiently well. Preventive digitalization of patients to be operated on who have sound hearts may present disadvantages and had therefore better be dispensed with. One must not operate on anemic subjects who present less than 2,500,000 red corpuscles, a hemoglobin content less than 30 per cent, or an arterial tension less than 70 maximum and 40 minimum. Insufficiency of the myocardium, respiratory insufficiency, and changes in vascular tonicity may predispose to thrombosis and embolism. Functional tests of the kidneys are important. The speakers emphasized the need of testing the function of the liver, since anesthesia and operative intervention have an unfavorable effect on that organ. The surgeon should aid glycogenesis by means of a diet based chiefly on carbohydrates. Finally, the psychic state and the condition of the vegetative nervous system exert an influence on the resistance of the patient.

HABITUAL CONSTIPATION

The second main topic on the program, "Habitual Constipation," was considered in common with the Società di medicina, and the mode in which the subject was treated was discussed in a previous letter.

Rome was chosen as the place of meeting for the next congress. The main topics on the program are: (1) tumors of the digestive tract, and (2) tumors of the spinal cord. The latter topic will be developed jointly with the Società de medicina interna.

The Sixth Meeting of the Urologic Society

The annual meeting of the Società italiana di urologia took place in Parma, under the chairmanship of Prof. R. Alessandri. Dr. Wigget of Milan presented the official paper on the topic "The Indications, Technic and Limitations of Cystography." The basis for the paper was material furnished him by Italian urologists and his personal observations made in the urologic department of the Ospedale Maggiore in Milan. As a contrast medium for injection into the bladder the speaker prefers collargol in a 5 to 10 per cent aqueous suspension. Dr. Wigget opposed cystography in tuberculosis of the bladder, though he approved it in hypertrophy of the prostate, in calculosis and in bladder tumors. In diverticula, radiography is exceedingly important, while in vesico-ureteral reflux it is the only method that enables one to recognize the presence and the proportions of those types in which the clinical signs are few and not characteristic. In the general discussion that followed, Terra Abrami expressed a preference for a 5 per cent solution of lithium iodide in cystography, and suggested that by the use of sodium bromide in addition its concentration may be reduced to 3 per cent, since in that manner even the smallest vesical calculi are brought into relief.

Lasio stated that a concentrated barium sulphate suspension may produce secondary incrustations. Rome was chosen as the place of meeting of the next congress. The main topic on the program will be "Colibacillosis."

Inquiries as to the Modes of Infant Feeding

In a recent circular letter addressed to the prefects of the realm, the minister of the interior (the general management of the public health service) gave directions for collecting statistics on infant feeding in Italy and on its effect on the health of infants. The collection of the statistics will be governed by two forms of control to be established: one being the death certificate and the other the smallpox vaccination certificate. The central institute of statistics has adopted a new form of death certificate in which, in reporting the death of an infant under 1 year of age, the physician must state whether or not the child was breast-fed, and, if so, for how long a time; whether or not the infant was exclusively breast-fed or received also artificial food, and whether the child was suckled by its own mother. Vaccination against smallpox is a legal requirement for all infants, at the latest before expiration of the first year of life. The physician who performs the first vaccination must state in the report that he sends to the public health office of the commune: whether or not the child is suckled by its mother; if not, whether or not the child is suckled by a wetnurse, indicating, in case it is thus breast-fed, whether the child is suckled at the home of its parents or at the nurse's home, and whether or not the child receives any artificial food, and, if so, to what extent.

RUSSIA

(From Our Regular Correspondent)

Jan. 15, 1928.

The First Union Congress of Pathologists

The First Union Congress of Pathologists met in Kiev from Sept. 14 to 20, 1927. More than 600 delegates from all parts of Russia as well as several German professors took part in the work of the congress. This congress aroused considerable interest among the scientists of other specialties. Members attended from the All-Ukranian Congresses, the Second Surgical in Kiev and the First Therapeutic in Odessa. Just on the eve of the Congress of Pathologists there took place the International Congress of Zoologists in Budapest. Prof. Rhoda Erdmann made her report both in Budapest and in Kiev. Three subjects were on the program: (1) Tissue Cultures and Problems of Pathology; (2) Problems of Malignant Tumors; (3) Pathology of the Reticulo-Endothelial System. As the time of the congress coincided with the twenty-fifth anniversary of the death of Prof. Rudolf Virchow,

Prof. N. Anichkov of Leningrad made a speech in commemoration of Virchow.

TISSUE CULTURES AND PROBLEMS OF PATHOLOGY

Prof. Rhoda Erdman reported on tissue cultures and problems of pathology. The author said that the development of a tumor is not a cellular but a humoral problem. Prof. A. Krontowski of Kiev reported on the present status of tissue cultures as a method of studying the questions of pathology. Prof. A. Timofejewski of Tomsk made a communication on the culture of tissues and of leukocytes. Part of his paper dealt with the culture in vitro of leukocytes from the blood of patients with acute forms of leukemia. The development of the tubercle in vitro after the addition of the bacillus of tuberculosis was studied. The work of A. Fischer, now in Berlin, on the characteristics of malignant cells in tissue cultures also was read. He has watched, besides several other things, the growth of normal and cancerous epithelium in vitro. He states that cancer epithelium interferes with the growth of fibroblasts.

PROBLEMS OF MALIGNANT TUMORS

Prof. N. Petrov of Leningrad gave a critical survey of experimental malignant growth. He spoke on transplantation of tumors, heterogeneous and homogeneous, their culture outside the organism, the changes in the physicochemical state of the medium, the influence of the glands of internal secretion, nervous system, heredity, nutrition and other factors. Prof. A. Reprev of Kharkov gave an analysis of the effect on rats of the transplantation of malignant tumors. A. Krichevsky and Z. Sinelnikov of Kharkov reported on a successful transplantation of melanosarcoma from man to white rats. P. A. Kucherenko and M. I. Kucherenko have discovered, in the endocrine glands, hypoplastic changes of fibrososclerotic character and hypertrophy of the islands of Langerhans under the influence of malignant tumors. They connect these discoveries with the premature aging of young patients with tumors. B. M. Solowiev of Kiev examined the connection between physicochemical changes in the organism during its senescence and in the time of the development of malignant tumor.

PATHOLOGY OF RETICULO-ENDOTHELIAL SYSTEM

A survey was made by Prof. N. Anichkov of Leningrad of the morphologic aspects of pathologic changes in the reticulo-endothelial system. Prof. M. Pavlov of Kharkov spoke on the physiologic aspect of this question. Prof. S. Khalatov of Leningrad has discovered that erythrocytes are destroyed by the liver and not by the spleen; the normal composition of blood is regulated mostly by the liver, and when it is diseased the whole organism is affected. Prof. A. I. Abrikossov, the president of the congress, and F. D. Wulf of Moscow spoke on the question of hyperplasia of the reticulo-endothelial system. The authors suppose that hyperplasias of the reticulo-endothelial system are entities, and that they differ from secondary hyperplasias of the reticulo-endothelial system and also from the atypical forms of lymphogranulomatosis. The researches of N. Nicolaev of Moscow were concerned with the pathology of the reticulo-endothelial system of infants under the influence of infections and intoxications.

REPORTS ON SUBJECTS NOT ON THE PROGRAM

Prof. A. Bickel of Berlin reported on researches in carbohydrate and nitrogen exchange under physiologic and pathologic conditions. H. J. Arndt of Marburg gave information on the effect of synthalin and insulin in experiments on animals, paying much attention to the metabolism. Prof. V. Lazarev of Kiev reported on the iron in the brain in dementia paralytica. Prof. S. Krinizky of Rostov-on-the Don reported on the effect on the organism of war gas, and demonstrated, by photomicrographs, histologic changes in different organs and systems. Prof. N. F. Melnikov-Rasvedenkov of Kharkov in his paper on organizational questions spoke of the unsatisfactory condition of prosectors in the Union and showed the necessity of improving the material conditions of prosectors.

THE CONGRESS EXHIBITION

The congress organized its own exhibition on pathology. About a thousand exhibits were sent in from different parts of Russia. The so-called silent papers consisted in the exhibition of preparations, with brief descriptions and deductions.

At the closing session the congress delegated the professor of surgery S. Fedorov of Leningrad to develop, on an international scale, questions connected with goiter, and Prof. A. I. Abrikossov as representative to the International Society of Ethnographic and Geographic Pathology. The second Union Congress of Pathologists is proposed for the year 1929 in Baku in the Caucasus.

Pathologico-Anatomic Commission Attached to the Academy of Science of Ukraine

At the Academy of Science in Kiev is organized a pathologico-anatomic commission composed of five persons: Prof. N. F. Melnikov-Rasvedenkov (president), P. A. Kucherenko, B. M. Solowiev (secretary), A. I. Smirnova-Samkova and G. I. Kvjatkovsky. The commission organized a central museum of ethnographic and geographic pathology at the academy of sciences, and an all-Ukrainian pantheon of scientists, where are collected and studied the brains of remarkable scientists.

BERLIN

(From Our Regular Correspondent)

Jan. 19, 1928.

Seventieth Birthday of Professor Minkowski

January 13, Professor Minkowski celebrated his seventieth birthday. After retiring, last year, from his post as director of the Medizinische Klinik in Breslau, on reaching the age limit, he established his home in Wiesbaden. To be sure, he is not enjoying absolute leisure, for he is serving a sanatorium there as consulting physician. Minkowski's greatest scientific achievement consisted in demonstrating that diabetes can be produced through experimental injury of the pancreas. In addition, Minkowski, together with his teacher Naunyn, carried out studies on oxybutyric acid as the parent substance of the acetone bodies in severe diabetes. His experimental extirpation of the liver has thrown light on the nature of icterus; and his researches on the physiology and the pathology of uric acid constituted the basis for his monograph on gout as contained in the Nothnagel handbook on "Spezielle Pathologie und Therapie."

Meeting of the German Society of Internal Medicine

The meeting of the Deutsche Gesellschaft für innere Medizin will be held in Wiesbaden, April 16-19, under the chairmanship of Prof. Dr. L. R. Müller of Erlangen. The main topics on the program will be: (1) "The Influence of Cancer on Metabolism," the discussion to be opened by O. Warburg, Berlin (introduction to cell physiology); Grafe, Würzburg (clinical observations on the influence of cancer on metabolism), and Sachs, Heidelberg (immunologic observations on the cancer problem, and (2) "Chronic Enlargements of the Spleen" (in cooperation with the Deutsche pathologische Gesellschaft), to be presented by Hueck of Leipzig (the normal spleen as a blood reservoir—preliminary anatomic remarks on the paper on splenomegalia); Naegeli of Zurich (the clinical aspects of splenomegalia); Lubarsch of Berlin (the pathologic anatomy of enlargement of the spleen).

The Coming Meeting of German Scientists and Physicians

The meeting of German scientists and physicians in Hamburg this year is set for September 16. The main topics on the program are: The Importance of Wöhler's Synthetic Production of Urea; the Scientific Effects of Meteoric Showers; Telephotos, or Telephony with Very Short Waves; Problems of Coal Liquefaction; Fermentation and Respiration; from the field of the natural sciences: Naegeli's Theory in Relation to the Mechanics of Waves; from the field of medicine: Sleep, Dreams, Hypnosis, etc.; Sexual Hormones; the Appearance and the Disappearance of Epidemics. An exhibit in the fields of medicine and the natural sciences will be organized.

The Anthropologic Institute in Dahlem (near Berlin)

At the last session of the Berlin Anthropologische Gesellschaft, Prof. Eugen Fischer, the director of the institute for anthropologic research, established in Dahlem, near Berlin, last fall, by the Kaiser Wilhelm Gesellschaft, gave a description of the new institute and announced the nature of the researches that are being carried on there. In the anthropologic department, to which the Virchow collection of skulls has been given over for safe keeping, not only anthropometry but also anthropobiology will be promoted; for instance, the problem of the crossing of races: whether thereby changes in the propagation of man will be effected; whether such crossing will bring out new characteristics. Furthermore, exact researches on the race characteristics of the German people, concerning which very little is known at present, will be instituted in various localities throughout the *reich*, having a stationary population, in order to collect positive data on the color of hair, on skull formation and on hereditary lines of descent. Another desire that Fischer entertains is, by means of courses, to make better known to the medical profession the technic of anthropologic measurements and the bases of the theory of hereditary transmission. In the department dealing with hereditary transmission in man, researches on twins arising from one ovum will be continued, in order to establish what characteristics in man are based on heredity and what characteristics are brought out by environmental conditions. Fischer is conducting at present a series of experiments on young growing rats whose mothers received a diet poor in vitamins, in order to discover how the shape of the skull is affected by the nature of the nutrition. In the institute for eugenics the fundamental bases or principles for all eugenic measures will be established; for instance, the importance or significance of the transmission of certain hereditary lines from the standpoint of the vitality and the growth and development of the people as a whole. Likewise, questions dealing with the increase and decrease of the birth rate will be studied, and an endeavor will be made to determine what classes of society are mainly affected by the decline in the birth rate, and to discover whether there may not be means at hand so to change cultural conditions as to prevent such decline.

Marriages

J. RUFUS MCCRACKEN, Waynesville, N. C., to Miss Minnie B. Doar of Georgetown, S. C., recently.

WALTER JOHN STARK, Spokane, Wash., to Miss Helen Margaret Smith of Tampa, Fla., January 25.

STANLEY W. HOLTON to Miss Rue Anning, both of Sedro-Woolley, Wash., Dec. 14, 1927.

S. TUMMINELLO to Miss Anna E. Dimarco, both of Baltimore, Dec. 26, 1927.

JAROLD ELTING KEMP to Miss Ann Stewart, both of Philadelphia, January 10.

Deaths

Samuel Shugert Adams ✠ Washington, D. C.; Georgetown University School of Medicine, Washington, 1879; lecturer, diseases of children, 1879-1883, and for many years professor of theory and practice of medicine at his alma mater; formerly professor of theory and practice of medicine, Medical Department of Columbian University; past president of the Medical Society of the District of Columbia; past president and for twenty-five years secretary of the American Pediatric Society; member of the Association of American Physicians; on the staffs of the Children's, Garfield, Sibley and the University hospitals; author of "The Evolution of Pediatric Literature in the United States," and of papers on typhoid in infancy, dentition and sudden death in diphtheria; aged 74; died, February 12, of heart disease.

George Gotthilf Eitel ✠ Minneapolis; Minnesota Hospital College, Minneapolis, 1888; University of Pennsylvania School of Medicine, Philadelphia, 1891; University of Berlin, Germany, 1901; proprietor of a hospital bearing his name; formerly on the staffs of the Asbury, St. Barnabas and City hospitals; aged 69; died, February 9, of coronary disease.

John Neely Rhoads, Philadelphia; Jefferson Medical College of Philadelphia, 1885; member of the Medical Society of the State of Pennsylvania; formerly on the staffs of the Lying-In, St. Agnes, Polyclinic and Jefferson hospitals; aged 68; died, January 28, of cerebral hemorrhage.

Francis F. Wisniewski, Chicago; Chicago College of Medicine and Surgery, 1910; member of the Illinois State Medical Society; aged 43; attending surgeon to the Norwegian-American Hospital, where he died, February 2, of cerebral hemorrhage and shock, following a fall while skating.

John Winfield Harrison ✠ Middle River, Md.; College of Physicians and Surgeons, Baltimore, 1890; past president of the Baltimore County Medical Society; formerly commissioner and health warden of Baltimore County; aged 58; died suddenly, January 25, of cerebral hemorrhage.

Chauncey Cooley Sheldon, Lynn, Mass.; Harvard University Medical School, Boston, 1877; member of the Massachusetts Medical Society; formerly on the staff of the Lynn Hospital; aged 79; died, January 31, in Boston, of coronary sclerosis, and hypertrophy of the prostate.

Charles R. Sumner, Rochester, N. Y.; New York Homeopathic Medical College, 1877; member of the Medical Society of the State of New York; on the staff of the Genesee Hospital; aged 75; died, January 27, of carcinoma of the intestine with metastasis in the liver.

Leo Thomas McNicholas, Racine, Wis.; Marquette University School of Medicine, Milwaukee, 1913; member of the State Medical Society of Wisconsin; served during the World War; aged 41; died, February 7, of pneumonia, following influenza.

Frederick V. Dotterweich ✠ Ashland, Ohio; Western Reserve University School of Medicine, Cleveland, 1895; at one time health officer of Ashland; formerly on the staff of the Samaritan Hospital; aged 63; died, January 24, of angina pectoris.

Charles A. Dudley ✠ Pittsburg, Kan.; University Medical College of Kansas City, Mo., 1906; formerly on the staff of the Mount Carmel Hospital; aged 47; died, January 23, at St. Joseph's Hospital, Kansas City, Mo., of lobar pneumonia.

Myron Darius Briggs, Champlain, N. Y.; Medical Department of the University of the City of New York, 1881; member of the Medical Society of the State of New York; aged 73; died, Dec. 27, 1927, at Atlanta, Ga., of lobar pneumonia.

Hugh H. Henry ✠ Camden, Ark.; University of Nashville (Tenn.) Medical Department, 1903; past president of the Ouachita County Medical Society; formerly on the staff of the Camden Hospital; aged 48; died, January 21, of pneumonia.

William H. Houser, Cherryville, N. C.; North Carolina Medical College, Charlotte, 1900; member of the Medical Society of the State of North Carolina; president of the Gaston County Medical Society; aged 58; died in January.

Bernardo Hughey, Frankfort, Ohio; Columbus Medical College, 1880; member of the Ohio State Medical Association; aged 77; died, January 24, at the Grant Hospital, Columbus, following an operation for carcinoma.

Frank Michael Rapoport, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1920; served during the World War; aged 31; died, February 5, at the University Hospital, of myelogenous leukemia.

Adelbert J. Clark, Kendall, N. Y.; University of Buffalo School of Medicine, 1879; aged 76; died, January 13, at the Arnold Gregory Memorial Hospital, Albion, as the result of a cerebral hemorrhage suffered two years ago.

Egbert Sumner Dickerson, Indianapolis; Western Reserve University School of Medicine, Cleveland, 1898; aged 55; was killed, February 5, when the automobile in which he was driving was struck by a train.

Edmund R. Knolle ✠ Brenham, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1891; formerly on the staff of the Brenham Hospital; aged 59; died, January 23, of nephritis.

Forrest Johnston Young ✠ Milford, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1907; served during the World War; aged 51; died, February 8, of arteriosclerosis.

Eugene P. Notrebe, Denver; Medical Department University of Louisiana, New Orleans, 1887; aged 64; died, January 3, at the Research Hospital, Kansas City, Mo., of carcinoma of the liver and colon.

Herman Ramming ✠ Borger, Texas; National University of Arts and Sciences Medical Department, St. Louis, 1916; served during the World War; aged 40; died, Dec. 28, 1927, at Amarillo, of pneumonia.

Armand Pfister Smith, Eutaw, Ala.; Kentucky School of Medicine, Louisville, 1875; member of the Medical Association of the State of Alabama; aged 76; died, Nov. 7, 1927, of Adams-Stokes disease.

Samuel A. MacGregor, Westfield, Wis.; Detroit College of Medicine and Surgery, 1895; member of the State Medical Society of Wisconsin; aged 60; died, Oct. 9, 1927, of carcinoma of the rectum.

George Robert B. Myers ✠ Napa, Calif.; American Medical Missionary College, Chicago, 1903; formerly on the staff of the Napa General Hospital; aged 52; died, January 13, of cerebral hemorrhage.

Thompson G. Heine, Medford, Ore.; Minnesota Hospital College, Minneapolis, 1888; formerly on the staff of the Sacred Heart Hospital; aged 64; died, Dec. 27, 1927, of mitral regurgitation.

George Harriss West, Newton, N. C.; Medical Department of the University of the City of New York, 1873; aged 77; died, January 30, in the Davis Hospital, Statesville, of mitral regurgitation.

Eugene Frankel, Chicago; University of Basel, Switzerland, 1896; member of the Illinois State Medical Association; aged 58; died, February 5, of carcinoma of the larynx and mediastinum.

George Agnew Hennings, Dell, Ark.; Homeopathic Hospital College, Cleveland, 1885; aged 64; died recently, at St. Joseph's Hospital, Memphis, Tenn., of sepsis, following thrombotic hemorrhoids.

Emanuel Schwab ✠ Cincinnati; Medical College of Ohio, Cincinnati, 1879; member of the Massachusetts Medical Society; aged 70; died, February 3, of myocarditis and nephritis.

Francis Marion Thomas, Blue Rapids, Kan.; Bellevue Hospital Medical College, New York, 1869; aged 86; died, Dec. 7, 1927, at a hospital in Manhattan, of hypostatic pneumonia.

William Frank Lewis, Fountain, Mich.; Eclectic Medical Institute, Cincinnati, 1895; aged 54; died, Nov. 24, 1927, at the Mercy Hospital, Manistee, of cirrhosis of the liver.

Charles Edwin Manning, Hartford, Wis.; St. Louis University School of Medicine, 1922; aged 32; died, in January, at Albuquerque, N. M., of pulmonary tuberculosis.

Evan Hyslin ✠ Tacoma, Wash.; University of Minnesota Medical School, Minneapolis, 1900; aged 56; died suddenly, January 14, of chronic nephritis and hypertension.

Homer Erasmus Conner, Akron, Ohio; Hospital College of Medicine, Louisville, Ky., 1877; aged 77; died, January 21, of uremia, following hypertrophy of the prostate.

Lancelot Mathews Sanders, Troy, Ala.; Tulane University of Louisiana School of Medicine, New Orleans, 1922; aged 31; died, January 14, of pulmonary tuberculosis.

S. Emmett Neihardt, South Boardman, Mich.; Medical Department of the University of Wooster, Cleveland, 1886; aged 64; died, January 26, of heart disease.

Rufus P. Moore, Seattle; Vanderbilt University School of Medicine, Nashville, Tenn., 1893; formerly a druggist; aged 67; died, January 26, of heart disease.

Herbert Cutler Bullard, North Attleboro, Mass.; Medical Department of Columbia College, New York, 1871; aged 84; died, January 5, at Lawrence, N. Y.

William Haywood Bobbitt, Indianapolis; College of Physicians and Surgeons, Baltimore, 1882; aged 66; died, February 8, of cerebral hemorrhage.

John Epps Sidwell, Lillydale, Tenn.; University of Tennessee College of Medicine, Memphis, 1891; aged 64; died, January 19, of tuberculosis.

Hugh Barker Powell, Indianapolis; University of Louisville (Ky.) School of Medicine, 1894; aged 55; died suddenly, February 2, of heart disease.

Emory Freeman Jones, Crumps Park, Ga.; Kentucky University Medical Department, Louisville, 1901; aged 53; died, January 28, of heart disease.

Frederick Spalding Ward, Springfield, Mass.; Dartmouth Medical School, Hanover, N. H., 1895; aged 59; died, February 5, of arteriosclerosis.

Frank Swarthout Agler, Surprise, Neb.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1900; aged 49; died, in January.

Peter Augustus Aikman, Windsor, Ont., Canada; Homeopathic Medical College of Missouri, St. Louis, 1869; aged 89; died suddenly, January 9.

Julia Stoddard Wood, Jennings, La.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1898; aged 67; died, January 25, of nephritis.

Allan Huston Adams, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1904; aged 48; died, January 14, of pneumonia.

John Charles Willard Bland, Tulsa, Okla.; Missouri Medical College, St. Louis, 1883; formerly a druggist; aged 68; died, January 2.

David Clark Cramer, Newburg, Pa.; Jefferson Medical College of Philadelphia, 1880; aged 73; died, January 3, of arteriosclerosis

Francis A. McNeill ✠ Dove Creek, Colo.; Eclectic Medical Institute, Cincinnati, 1874; aged 78; died, Oct. 25, 1927, of heart disease.

Peter Christensen, North Little Rock, Ark.; Homeopathic Medical College of Missouri, St. Louis, 1907; aged 70; died, Nov. 9, 1927.

Leonidas W. Trisler, Dayton, Ohio; Eclectic Medical Institute, Cincinnati, 1876; aged 77; died, January 24, of cerebral hemorrhage.

William Franklin Pruden, Portland, Ore.; Willamette University Medical Department, Salem, 1881; aged 84; died, January 17.

Milton Rutherford Peters, Boiling Springs, Pa.; Hahnemann Medical College of Philadelphia, 1881; aged 72; died, January 9.

Everett Alexander Orr, Byron, Mich.; Detroit Homeopathic College, 1903; aged 47; died, January 16, of heart disease.

Orson William Green, Elmhurst, Ill.; Hahnemann Medical College and Hospital, Chicago, 1886; aged 81; died, in January.

C. F. Wilkins ✠ Fort Collins, Colo.; Columbus Medical College, 1882; aged 72; died, January 9, of dilatation of the aorta.

George Warrette Dosh, Brighton, Iowa; Rush Medical College, Chicago, 1879; also a druggist; aged 74; died, Oct. 10, 1927.

Elijah Thomas Lawler, Tyler, Texas; University of Louisville (Ky.) School of Medicine, 1871; aged 77; died, January 10.

William Miller, Thurman, Ohio; Jefferson Medical College of Philadelphia, 1882; aged 74; died, February 4, of carcinoma.

Charles J. Cook, Belmont, Ky.; Indiana Medical College, Indianapolis, 1876; aged 84; died, Nov. 5, 1927, of senility.

John Lewin McLeish, Cincinnati; Medical College of Ohio, Cincinnati, 1897; aged 56; died, recently, of heart disease.

James Woilsdelle Bradley, Adairsville, Ga.; Southern Medical College, Atlanta, 1880; aged 77; died, January 11.

Emerson David Graham, Keswick, Ont., Canada; Trinity Medical College, Toronto, 1894; died, Oct. 23, 1927.

Garland A. Gerran, High Point, N. C.; Leonard Medical School, Raleigh, 1897; aged 59; died, January 10.

Richard M. Greer, Whitney, Texas; Louisville (Ky.) Medical College, 1879; died, in January.

Bureau of Investigation

THE "DR. S. J. EAGAN" FRAUD

The Federal Trade Commission Exposes the Community of Interests Between an Advertising Agency and a Medical Fake

On December 16, 1927, the Federal Trade Commission issued a "Cease and Desist" order in the matter of Leroy A. Kling, John E. Weddell, William R. Durgin and Cecil Widdefield, said to be co-partners doing business under such

ADVENTURE 11

Bride and Groom!

[*By* WILLIAM R. DURGIN]

DECEMBER and May! Once I would have condemned any mating of age with youth. Yet a month ago I was best man for my old friend Col. Bemis—and "old" friend he is, for the colonel is in his fifty-eighth year—and his petite bride who then lacked a few days of being twenty!

There isn't a happier couple in the state; their happiness is apparent to all observers. But I wonder what others would think if they had seen Col. Bemis as I saw him less than a year ago—before he had taken the big brace that two physicians said a man of his age could never take!

Bemis had let-up and slowed-down; he had become a mere spectator in life's race—when something happened.

The remarkable means by which this man regained an almost youthful energy should interest any man who has lost even part of his normal capacity for work and play. This is the story:

Did you ever hear of SPINE MOTION? Neither did I until two years ago. Neither did Col. Bemis until less than a year ago. But within a *month* SPINE MOTION moved him up several notches, physically, and his energies have been on the rise ever since. This simple but unusual principle of revitalization has to do, as the name implies, with the *spine*. It seems that settling of the spine accounts for many of the nervous disorders that age the body; and the slightest elongation of a "settled" spine is often all that's needed to restore abounding energies and endurance. When Hobart Bradstreet discovered SPINE MOTION he gave us men past the forty mark a ten or twenty year renewal on our lease of *active* life! Here's how it works:

Let's assume you start SPINE MOTION today; you take one motion only, it takes but five minutes [illegible]

"The Colonel may look his age, but by all that's remarkable he doesn't act it—nor feel it, if his enthusiasm is any indication"

more work than ever, is up till all hours, eats what he likes, smokes incessantly—and he doesn't seem to have any nerves.

Bradstreet no longer offers his personal services in conditioning men, but you can have SPINE MOTION in the same form it was given Col. B[emis]

The "Bride and Groom" advertisement by William R. Durgin, chief copy-writer for the Kling-Gibson advertising agency. The "Colonel Bemis," the "groom," was neither Colonel Bemis nor a groom; nor was the "bride" a bride. Both were professional models and neither had ever heard of "Spine Motion" until they read the advertisement!

trade styles as "Dr. Eagan Manufactory," "Dr. S. J. Eagan," "Dr. Eagan Laboratory," "Pharmaceutical Products, Ltd.," and Kling-Gibson Company, all of Chicago.

The Commission, in its findings of facts, declared that Kling, Weddell, Durgin and Widdefield under the various "Dr. Eagan" trade-styles were engaged in the business of selling cosmetics, creams, lotions and other toilet preparations on the mail-order plan. The Kling-Gibson Company, an advertising agency, was charged with composing and preparing advertisements for the various quackeries exploited under the names "Dr. S. J. Eagan," "Dr. Eagan Laboratory," etc. The Commission declared, further, that in the advertisements of these different quack enterprises were many false, fraudulent and misleading statements and representations regarding the preparations and the ingredients, such representations being made with the intent and purpose of deceiving and defrauding the public.

The Commission then specified some of the fraudulent claims. Among them were those dealing with a product sold as "Facial Film," said to have been made according to the private formula of Dr. S. J. Eagan (who was represented as a physician of great ability, experience and high standing) and to have been compounded in a laboratory under the direct supervision of Dr. Eagan. In fact, there was no Dr. S. J. Eagan, and the toilet articles were prepared and compounded by other manufacturers, who also supplied the formulas.

Then there were "Dr. Eagan's Magic Gloves," which were advertised under the claim that they were medicated with a marvelous solution perfected by the famous Dr. Eagan. The advertisements declared that, when worn for one night, these gloves would beautify, whiten, soften and make smooth the hands, as well as remove freckles, blotches and discolorations. As a matter of fact, they would do none of these things.

There were also, "Dr. Eagan's Hand Tissue Builder," "Dr. Eagan's Skin Whitener," "Dr. Eagan's Medicated Soap" and "Dr. Eagan's Lotion Depilatory," each of which was advertised under false and fraudulent claims. In connection with the "Facial Film," already referred to, the Kling-Gibson concern had stated in the advertisements that it contained a substance (adrenalin), which was worth $5,000 a pound. The Federal Trade Commission pointed out that adrenalin had a value of about $16 a pound.

In view of the facts given the Federal Trade Commission ordered that the various respondents cease and desist from continuing to perpetrate the various frauds.

In this connection readers of THE JOURNAL may recall an editorial published October 16, 1926, under the title, "'Before and After Taking' Bradstreet." Hobart Bradstreet was a Chicago quack, who capitalized the absurd thesis that we grow old because of a "settling of the spine." Bradstreet sold a "course" in "spine motion"—in other words, every man his own chiropractor. Some of the pieces of advertising used in exploiting the Bradstreet quackery were some "before and after" pictures. One "before taking" picture showed a man with a face heavily lined and aged before his time, while the "after taking" picture purported to show the same man with the lines of age gone, due to a five weeks' "course" in "spine motion." The Federal Trade Commission brought out the fact that both pictures were taken in the studio at one sitting and the different appearances were produced by the photographer and the engraver. The man who sat for the picture was a clothing salesman, who had never heard of Hobart Bradstreet nor his "spine motion."

Still another piece of effective, and equally fraudulent, advertising used by Bradstreet and dealt with in detail by the Federal Trade Commission, was an advertisement entitled "Bride and Groom." This presented in picture and story form a white-haired dignified bridegroom of advanced age, against whose shoulder leaned a good-looking youthful bride. The advertisement bore as its author the name of William R. Durgin. This man is one of the copywriters for the Kling-Gibson advertising agency, and has been featured by that

[illegible]TOPLAY MAGAZINE—ADVERTISING SECTION 119

MAGIC GLOVES

Whiten Hands Overnight

Astounding Scientific Discovery—Dr. Eagan's Magic Night Gloves! Make rough, reddened, work-worn hands soft and white over-night!

Results Absolutely Guaranteed in Writing. Legal Guarantee Bond with Every Pair.

Try the Gloves FREE

Try the gloves five nights free. Note the amazing difference in your hands in just five nights' wear. Mark how long your hands, form white and smooth. If five nights of wear of the gloves doesn't make your hands more beautiful than you ever dreamed possible, don't keep the gloves. Return them to us and you won't be out one cent for the free trial. We are the judge.

SEND

The "Magic Gloves" of the noted Doctor Egan. Cheap cotton affairs put out by a group of advertising men. There was no such person as Doctor Egan.

agency as the person to whom they pay $50,000 a year for writing "record-breaking advertisements!"

The Durgin advertisement of the bride and groom declared that the groom was a "Colonel Bemis," who was in his fifty-eighth year. As an aphrodisian touch the Durgin advertisement had the bride say: "The Colonel may look his age, but by all that's remarkable he doesn't act it—nor feel it, if his enthusiasm is any indication." The Colonel's "enthusiasm," according to the Durgin advertisement was due to a "course" in Bradstreet's "spine motion." The facts were, according to the Federal Trade Commission, the "Colonel" was a jewelry

salesman who made money on the side as a photographer's model, while the "bride" was a professional model. Neither of these persons had ever heard of Hobart Bradstreet until they read the advertisement in which their pictures appeared. The Federal Trade Commission issued a "Cease and Desist" order against Bradstreet.

The case of the Eagan quackery just cited is of more than ordinary interest to those who believe in truthful advertising. THE JOURNAL has pointed out for years that, while the mail-order quack may be debarred from the use of the mails, and even be sent to the federal penitentiary, the advertising agencies and the publications that accept the advertisements (and obtain the lion's share of the quacks' profits) are not penalized. THE JOURNAL has also pointed out for years the vicious alliance that exists between quackery and certain advertising agencies. The advertising agent knows better than any one else how entirely unnecessary it is to have any medical or pharmaceutical knowledge in order to swindle the public, through the United States mails, on a medical or pharmaceutical proposition. All that is necessary for the successful exploitation of a medical fake is a knowledge of advertising and an absence of conscience.

Correspondence

TREATMENT OF GONORRHEA OF CERVIX

To the Editor:—I have read with interest the article by Dr. Lucius E. Burch of Nashville, Tenn., in THE JOURNAL, January 21. While his procedure may be efficient in the treatment of cervical gonorrheal infections, I cannot see how it can be considered applicable to the majority of pelvic infections. In a considerable experience it has been exceptionally rare for a case to be presented for examination until there were general pelvic infections.

In a study of the pathologic changes in a large number of infected fallopian tubes, I noted that:

1. When the infection was gonorrheal it was almost universally bilateral. If puerperal or postabortive, it was frequently unilateral, and on the left side; and, when occurring in connection with or subsequent to an appendicitis, on the right side.

2. In those cases due to gonorrhea, the ciliated epithelium of the tubes was destroyed, the tubes were kinked by adhesions, the fimbriated end of the tubes was frequently obliterated, and infection of the ovary was common.

3. The adhesions resulting from pelvic peritonitis whether from gonorrheal or puerperal infection are usually very extensive, and the exudate sometimes fills the true pelvis.

True, the pus in an infected tube will frequently become practically sterile, but this does not change the pathologic condition as it relates to a danger of tubal pregnancy, serious menstrual disturbances the result of pelvic adhesions, and even the possibility of intestinal obstruction resulting from adhesions formed during an attack or repeated attacks of pelvic peritonitis. The doctor's method is ingenious and undoubtedly would be of value so far as ridding the cervix of the infections is concerned; but it cannot be expected to cure or even benefit the infection beyond the uterus.

In a number of cases in which an attempt was made to save the possibility of maternity by leaving one tube and ovary at an operation for tubal pregnancy, it has been necessary to operate for a second tubal pregnancy in varying periods thereafter. And I have seen a number of cases, seven or more of which have been reported in full before local and state medical societies, in which pregnancy occurred in both tubes, and in all these there has been a definite and clear-cut history that would indicate the origin to be a gonorrheal infection.

I agree with the author in the view that gonorrhea in the female is more destructive, more far reaching in its results and more dangerous to the welfare of the woman than tuberculosis or any other condition except cancer.

F. F. LAWRENCE, M.D., Columbus, Ohio.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PACHON OSCILLOMETER FOR DETERMINING BLOOD PRESSURE

To the Editor:—I am contemplating the purchase of a Pachon oscillometer. Before purchasing, however, I desire to obtain a reliable opinion from those that know whether or not this instrument is practical and reliable. Even the Tycos people who put out a standard "clock" type of instrument state in their literature that the readings on any instrument of the "clock" type, depending on the oscillations on the hands of the dial, are not reliable. What is the consensus as to this type of instrument and the Pachon in particular, put out by the house of Albert C. Gaudin, 342 Madison Avenue, New York? These people state that there are 25,000 of this type of instrument in use and some of the best men in this country are using it. How about that?

CLERY RUTAN TREAT, M.D., Chico, Texas.

ANSWER.—The oscillometric method of blood pressure determination is generally regarded as offering the most accurate indirect method at hand. Visualization of changes in the arterial tension removes the undesirable factor of the personal equation encountered with the palpatory and auscultatory methods. Many instruments utilizing the oscillometric principles are on the market and differ only in the mode of compression and in the detection of the oscillation.

The Pachon apparatus, besides being very sensitive, is particularly well adapted to hospital and office use. The relatively bulky volume of the oscillometer renders it difficult to carry about. Its determination of the diastolic pressure is more accurate than most of the methods now available.

There are a large number now in use.

PERMANENT DILATATION OF PUPIL

To the Editor:—A girl, aged 2 years, was brought to me immediately after she had been hit in the right eye with a stone thrown by a boy. I found particles of sand in the conjunctiva and on the cornea, an abrasion of the cornea over an area of about 2 mm. square, and a bruise of the lids at the outer angle of the eye, with subconjunctival hemorrhage. The foreign bodies were removed and an antiseptic eye wash was used. The patient was given 3 per cent ointment of ammoniated mercury to use in the conjunctiva two times daily. Three days later there was a discoloration of the sector of the iris corresponding to the lower third of the circumference of the pupil. Another ophthalmoscopic examination at this time revealed blood diffused throughout the anterior chamber (none was found at the time of the first visit) and there was also some bleeding in the vitreous of the eyeball in the lower nasal quadrant. There were ecchymoses into the entire upper eyelid and subconjunctivally on the lower nasal quadrant of the eyeball. The second day there was a very marked loss in vision. Because of the patient's immature age the field could not be determined, but there was an external strabismus when the sound eye was covered and the patient fixed on an object, indicating that the chief loss of function was probably in the region of the retinovitreous hemorrhage. From the very beginning the pupil on the affected side was about 4 mm. in diameter, while on the sound side the pupil was about 2 mm. in diameter. This has continued so for over a month now. The mother says that before the accident the pupils were alike in size. The affected pupil responds to light and in accommodation, as well as to mydriatics and miotics. The discoloration of the iris has disappeared, as well as signs of hemorrhage in the eye. There is still some discoloration subconjunctivally on the eyeball at the external angle, but this is fading out slowly. Vision is gradually returning. The patient has been on ferrous iodide and sodium iodide at different times throughout the month, one or the other having been taken continuously. Light antiseptic ointments have been used in the conjunctiva. The abrasion of the cornea is entirely healed.

I have written all this so that you might be able to give me some light on the question of the persistent dilatation of the pupil in the injured eye. This is cause for concern to the mother. I have given her the impression that this pupil will probably return to normal in time. I should like to know the exact explanation of this persistent large pupil. If you publish this, kindly omit my name.

M.D., California.

ANSWER.—Not infrequently a blunt contusion of the eye produces a laceration of the pupillary margin of the iris. Such a laceration may be sufficiently extensive to cause a pupillary distortion resembling a coloboma or may be so

minute as to escape detection except under the most careful slit lamp observation. The tear, which is invariably radial, is apt to involve the musculus sphincter pupillae, resulting in a moderate dilatation of the pupil, known as mydriasis traumatica. Accompanying the laceration, which is due to transmitted blunt force, there is more or less hemorrhage, which may be confined to the iris stroma or which may escape anteriorly into the aqueous and posteriorly around the equator of the lens into the vitreous. That evidently occurred in the case described by our correspondent. The decrease in vision may have been due to the interference with light rays by the free blood or may have been due to a partial paralysis of the ciliary muscle with resultant suspension of accommodation, either by contusion or by direct extension of the laceration into the ciliary body. In view of the improvement in vision, the former is the more probable. The pupillary dilatation may be permanent. On the other hand, in many cases, the tear in the sphincter eventually becomes closed and there is a restoration of pupillary function.

TREATMENT OF PRECANCEROUS CONDITIONS OF THE LIP

To the Editor:—What is the best treatment for early precancerous conditions of the lower lip in a man over 50? There is no gland involvement, just a scaliness that has been present for years in the same spot. The patient is a pipe smoker and chews tobacco. I have advised stopping these. The patient is a laboring man; the nearest roentgen-ray apparatus is 20 miles; the nearest radium (except radon plaques) a hundred miles. I have considered excision of the area by surgery, radon plaques, roentgen ray, acid nitrate of mercury and electrocoagulation. This is a small town general practitioner's problem that I would appreciate your assistance in solving. Please omit name and address.

M. D., New Brunswick.

ANSWER.—The description of the lesion here is not clear. Apparently our correspondent has reference to one, or perhaps two, circumscribed scaly patches on the lower lip. If so, these are probably superficial patches of leukoplakia. If there is nothing but these white patches that scale a little, without redness of the base and without proliferation of the tissues as evidenced by a base that is slightly elevated, probably the best thing to do would be to let them alone. The lips should be protected and kept soft by the application, two or three times a day, of a bland salve. Ointment of rose water, simple ointment or petrolatum is sufficient. If there is anything more than this—short of a definite cancer of the lip—it can be handled satisfactorily by superficial cauterization with acid solution of mercuric nitrate B. P. This is applied to the patches until they are well cauterized on the surface and have a white pellicle. This may be allowed to slough off and heal of itself.

PRODUCTION OF HUNGER PAIN

To the Editor:—Kindly give me the current view as to the factors involved in the production of the so-called hunger pain that accompanies not only duodenal ulcer but also some other abdominal pathologic states.

GEORGE M. NILES, M.D., Atlanta, Ga.

ANSWER.—The most recent and thoroughgoing studies of the cause or causes of so-called hunger pains in gastric and duodenal ulcers, and in gastric cancer, are those reported by Dr. Walter L. Palmer in the *Archives of Internal Medicine* (**38**:603 [Nov.] 1926; **39**:109 [Jan.] 1927). Palmer also critically examines all clinical and experimental literature dealing with the problem up to and including 1926.

In gastric and duodenal ulcers, as well as in cancer, there may be no pain at all, there may be intermittent pain, the so-called hunger pains, particularly when the stomach is empty or nearly empty, or there may be more or less continuous pain; this is usually greater when the stomach is empty or nearly empty of food but may be present even during the meal or start from half an hour to two hours after meal. Furthermore, spasms in the jejunum and ileum or in any part of the large bowel may sometimes be confused with "hunger pains." In other words, different individuals have varying capacities of localizing these pains.

As to the cause of the pains there are two prevailing views; probably the older is the view that the pain is induced by acid irritation of the ulcer area. This view seemed to receive strong support from the fact that in many cases the pains can be controlled either by eating, which dilutes or neutralizes the gastric juice acid for a while, or by taking alkalis (direct neutralization). However, when the pain is truly intermittent like the normal pangs of hunger, it is difficult to explain these pains on the basis of acid irritation alone because of the fact that the pains increase and decrease in intensity despite the continuous acid bathing of the ulcers. This comment applies particularly to ulcers in the stomach. When the ulcer is located in the duodenum, the intermittent pain can be explained on the basis of hydrochloric acid irritation by aid of the intermittent emptying of the acid gastric content into the ulcerated duodenum. The second view as to mechanism is based on the fact that the stomach and intestine, even when empty, undergo rhythmic contractions and relaxations, and it has been proved that even in healthy persons, when these contractions are strong enough, they produce pain of varying degrees of intensity. This is, of course, well known in the case of so-called gas pains in the large bowel. In other words, either strong stretching of any part of the alimentary canal or strong spasmodic contractions cause varying degrees of pain. Direct experiments with patients with ulcers have shown that in some cases intermittent pain occurs synchronously with the intermittent hunger contractions. In other cases there seems to be no synchronism between the pain and these contractions. With the balloon in the stomach, one does not register the contractions of the pylorus or the contractions of the duodenum. In other words, there is no known method whereby the degree of contraction or spasm in the area immediately surrounding the ulcer can be accurately measured. The facts, then, at present may be thus summarized:

The hunger pains in ulcer or in carcinoma may be caused by the normal contractions in the region of the ulcers, stimulating nerves that have been rendered hypersensitive by the ulcer. In other cases there may be actual acid irritation leading to a state of pain either by acid causing edema in the ulcer area, by causing increased reflex contractions, or by direct acid irritation of exposed nerve endings in the ulcer area. The situation is complex and the mechanism cannot be predicted in any given case. It has been clearly shown, however, that, by stretching the small intestine in persons who have had ulcers and ulcer pains but who have been freed from them by surgery, the pains produced are felt by the patients as identical with their old ulcer pains. On the basis of direct chemical irritation of hypersensitive pain nerves in ulcer areas one might expect that strong alkalis should also cause increased pain. This seems to be true in some cases, but the final answer to the question whether direct acid irritation of the nerves in the ulcer ever directly causes pain must await proved cases of ulcer and typical ulcer pains in patients with achylia gastrica.

Dr. Palmer concludes his study of the mechanism of ulcer pains as follows:

Peptic ulcer with true achlorhydria occurs rarely, and the question of the occurrence and type of pain in such cases is unsettled.

Hydrochloric acid is the normal stimulus to the pain-producing mechanism of sensitive peptic ulcers.

Normal gastric peristalsis may be an adequate mechanical stimulus in very sensitive ulcers.

Hydrochloric acid may make sensitive both the sensory and the motor gastric mechanisms.

No evidence has been found to support the view that hyperchlorhydria may cause typical ulcer pain in the absence of a definite organic lesion of the gastric or duodenal mucosa.

Exact localization and differentiation of different types of enteric pain may be very difficult, if not at times impossible.

Under differing conditions, acid irritation and muscle tension may be responsible for all, a part or none of the pain of gastric carcinoma.

JOYZ YERBA MATÉ

To the Editor:—What ingredients cause the exhilarating effect obtained from copious ingestion of freshly prepared "Joyz Yerba Maté," a South American drink? Please use initials only.

A. C., M.D., Pennsylvania.

To the Editor:—I have had a request as to the efficacy of a South American drug called "Joyz Yerba Maté," imported by the International Maté Company, Inc., of New York. Can you give me any information as to its action and the conditions in which it is used?

G. B., M.D., Massachusetts.

To the Editor:—Kindly advise if you have data on South American "Yerba Maté Tea," as useful in medicine, particularly diabetes.

J. G. L., M.D., New York.

To the Editor:—Would it be asking too much to report on this "wonderful drink," "Joyz Yerba Maté," in THE JOURNAL?

J. M. McG., M.D., Oregon.

ANSWER.—"Joyz Yerba Maté" seems to be a proprietary form of the rather well known Paraguay tea, which has for its essential ingredients caffeine and tannin. In circulars that have been sent out to those who answer the Joyz Yerba Maté advertisements, it is declared that the preparation has "marvelous medicinal qualities," and that it is "considered an excellent corrective for rheumatism, kidney troubles and nervous debility" and that "one of the most striking proper-

ties" of Joyz Yerba Maté "is the effect it has of purifying the blood and kidneys and so ridding the system of those poisons that are the fundamental causes of Rheumatism, Gout, Kidney Trouble and debility." The trade package says that it "electrifies your tired body and brain into eager, vivid life again." Paraguay tea is a popular drink in South America, and it is evidently the intention of the International Maté Co., Inc., to introduce it into the United States. Apparently the concern has the impression that, in order to get a public to take up what is to them a new drink, it is necessary to invest the product with medicinal qualities of a "patent medicine" type.

STETHOSCOPE FOR PHYSICIAN HARD OF HEARING

To the Editor:—I am a junior medical student at the University of Michigan, and am slightly deaf. I find it very difficult to hear vesicular breath sounds with an ordinary stethoscope. Several physicians have suggested using a phonendoscope, but I have not been able to find one or learn of its advantages. Can you advise me as to whether or not one of these instruments is of any advantage to one in my condition, also where are they available?

STUDENT.

ANSWER.—A reply to a somewhat similar query was published not long ago. A good type of phonendoscope is the Bazzi-Bianchi-Bowles. This apparatus will probably be of considerable service and can be obtained from any large dealer in surgical instruments.

EFFECTS OF CHRONIC BARBITAL POISONING

To the Editor:—I have a patient who has taken 7½ grains of veronal every night for the past ten years. She is now getting some difficulty in articulation and numbness in the throat resembling somewhat a bulbar paralysis without any evidence of atrophy. Do you think that chronic veronal poisoning could cause a bulbar paralysis? Do you think that 7½ grains of veronal every night for ten years could cause a bulbar paralysis? Please omit name.

M.D., Indiana.

ANSWER.—It is not likely that chronic overuse of barbital (veronal) could produce the actual lesions found in bulbar paralysis, but in some cases drooling, inability to swallow and disturbance of articulation have been seen. These symptoms clear up after the drug is withdrawn for a time, showing that it is a functional disturbance rather than a degenerative lesion or hemorrhage.

The lesions in bulbar paralysis are typical—areas of degeneration, acute inflammatory foci, localized hemorrhages and atrophy of the medulla. In poliencephalitis and epidemic encephalitis there is sometimes an involvement of the medulla, with a clinical picture of bulbar paralysis. Syphilis and tuberculosis, pressure cysts and injuries may produce similar symptoms.

BACTERINS

To the Editor:—I would appreciate any information you can give regarding the respective merits of plain bacterin and sensitized; bacterin versus serobacterin. What is your opinion of pertussis bacterin as a preventive and treatment for whooping cough? In industrial work we have occasion to use a considerable amount of serums and vaccines among employees and families.

R. M. WILLHOUR, Tulsa, Okla.
Superintendent, First Aid.

ANSWER.—So far as it is possible to judge from the results recorded in medical literature, there is no material difference in the value of plain bacterial vaccines and of so-called sensitized vaccines. The action of the latter is said to be more rapid than that of the ordinary bacterial vaccine (New and Nonofficial Remedies, 1927, p. 371). It is safe to say that the use of bacterial vaccines of all kinds for curative purposes is diminishing and there are no indications that this change in treatment is causing any harm to patients.

There is no agreement as to the value of pertussis vaccine among those who have used it either as a preventive or in the treatment of whooping cough.

TREATMENT OF GONORRHEA IN A GIRL

To the Editor:—A girl, aged 9 years, has had gonorrhea of more than two years' duration. Would it be advisable to cauterize the cervix or is there too much danger of getting a stenosis at this age if one cauterizes deeply enough to destroy the glands? Kindly omit name and address.

M.D., Ontario.

ANSWER.—Superficial cauterization of the cervix cannot reach the seat of gonorrheal infection, and cauterization penetrating into the deeper tissues may lead to disastrous sloughing and cicatrization without even furnishing any guarantee for eradication of the infection. Intravaginal and endocervical manipulations in children are apt to elicit foudroyant spreading of infections.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
CALIFORNIA: Los Angeles, Feb. 27. Sec., Dr. Charles B. Pinkham, 623 State Bldg., San Francisco.
COLORADO: Denver, April 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.
CONNECTICUT: Hartford, March 13-14. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, March 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
DISTRICT OF COLUMBIA: Washington, April 10. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye St., Washington.
HAWAII: Honolulu, April 9-12. Sec., Dr. James A. Morgan, Room 48 Young Bldg., Honolulu.
IDAHO: Boise, April 3. Commissioner of Law Enforcement, Hon. F. E. Lukens, Boise.
ILLINOIS: Chicago, April 10-12. Supt. of Reg., Mr. V. C. Michels, Springfield.
MAINE: Portland, March 13-14. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.
MASSACHUSETTS: Boston, March 13-15. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.
MINNESOTA: Minneapolis, April 17-19. Sec., Reg. Bd., Dr. A. E. Comstock, 524 Lowry Bldg., St. Paul. Basic Science examinations, April 3. Sec., Basic Science Bd., Dr. E. T. Bell, U. of Minnesota, Minneapolis.
MONTANA: Helena, April 3-5. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEW HAMPSHIRE: Concord, March 8. Sec., Dr. Charles Duncan, Concord.
NEW MEXICO: Santa Fe, April 9-10. Sec., Dr. Wm. T. Joyner, Roswell.
OKLAHOMA: Oklahoma City, March 13-14. Sec. Dr. J. M. Byrum, Shawnee.
PORTO RICO: San Juan, March 6. Sec., Dr. Diego A. Biascoechea, 3 Allen St., San Juan.
RHODE ISLAND: Providence, April 5-6. Sec., Dr. B. U. Richards, State House, Providence.
WISCONSIN: Madison, March 17. Sec., Basic Science Bd., Prof. M. F. Guyer, U. of Wisconsin.

New York September Examination

Mr. H. J. Hamilton, chief of the Board of Medical Examiners of the State of New York, reports the written examination held at Albany, Buffalo, New York and Syracuse, Sept. 19-22, 1927. The examination covered 9 subjects and included 10 questions. An average of 75 per cent was required to pass. Of the 186 candidates examined, 145, including 8 osteopaths, passed, and 41 candidates, including an osteopath, failed. Twenty-two candidates were licensed by endorsement of their credentials. The following colleges were represented:

PASSED College	Year Grad.	Number Passed
University of Arkansas School of Medicine	(1926, 3), (1927)	4
Yale University School of Medicine	(1923, 2), (1926, 3)	5
Georgetown University School of Medicine	(1927)	1
George Washington Univ. Med. School	(1926, 2), (1927, 5)	7
Howard University School of Medicine	(1926)	3
Emory University School of Medicine	(1926)	1
Loyola University School of Medicine	(1927)	1
Northwestern University Medical School	(1927)	1
University of Illinois College of Medicine	(1927)	1
Indiana University School of Medicine	(1927)	1
State University of Iowa College of Medicine	(1927)	1
Tulane University of Louisiana School of Med.	(1925), (1926)	2
Johns Hopkins University School of Medicine	(1927)	1
University of Maryland School of Medicine and the College of Physicians and Surgeons	(1927)	1
Boston University School of Medicine	(1924), (1927, 6)	7
Harvard University Medical School	(1927)	1
Tufts College Medical School	(1927)	2
University of Michigan Medical School	(1925)	3
St. Louis University School of Medicine	(1926), (1927, 3)	4
Albany Medical College	(1927)	2
Columbia Univ. Coll. of Phys. and Surgs.	(1926, 3), (1927, 4)	7
Cornell University Medical College	(1927)	5
Long Island College Hospital	(1927)	6
Syracuse University College of Medicine	(1927)	3
University and Bellevue Hosp. Med. Coll.	(1926, 2), (1927, 6)	8
University of Buffalo School of Medicine	(1927)	3
Eclectic Medical College, Cincinnati	(1927)	1
University of Cincinnati College of Medicine	(1927)	1
University of Oklahoma School of Medicine	(1926)	1
Jefferson Medical College of Philadelphia	(1926)	1
University of Pennsylvania School of Medicine	(1927)	1
Woman's Medical College of Pennsylvania	(1924)	1
Meharry Medical College	(1927)	1
University of Tennessee College of Medicine	(1927)	2
Vanderbilt University School of Medicine	(1926), (1927)	2
University of Texas School of Medicine	(1927)	1
University of Vermont College of Medicine	(1924), (1927)	2
Medical College of Virginia	(1925)	1
University of Virginia Department of Med.	(1924), (1927, 3)	4
McGill University Faculty of Med.	(1919), (1925), (1926)	3
Queen's University Faculty of Medicine	(1926), (1927, 4)	5
University of Toronto Faculty of Medicine	(1921), (1922), (1924), (1926, 2)	5
University of Vienna, Austria	(1917), (1919),* (1923)	3
University of Brussels, Belgium	(1923)*	1

Comenian University of Bratislava, Czechoslovakia	(1920)*	1
University of Leipzig, Germany	(1925)	1
University of Würzburg, Germany	(1920)*	1
University of Athens, Greece	(1923)*	1
University of Budapest, Hungary	(1918),* (1919)*	2
University of Szegedin, Hungary	(1919)*	1
University of Naples, Italy	(1898),* (1907)	2
University of Siena, Italy	(1924)*	1
University of Kazan, Russia	(1916)	1
Dragomanov Institute, Russia	(1912)*	1
University of Moscow, Russia	(1917)*	1
University of Leningrad, Russia	(1913)*	1
University of Edinburgh, Scotland	(1927)*	1
University of Basel, Switzerland	(1922)*	1
University of Berne, Switzerland	(1922), (1927)*	2
American University Medical School, Syria	(1927)*	2
Osteopaths		8

College	FAILED	Year Grad.	Number Failed
University of Arkansas School of Medicine		(1927)	1
Georgetown University School of Medicine		(1927)	1
Howard University School of Med.		(1925), (1926, 2), (1927)	4
University of Louisville School of Medicine		(1927)	3
Harvard University Medical School		(1927)	1
University of Michigan Medical School		(1923)	1
St. Louis University School of Medicine		(1927)	1
Creighton University School of Medicine		(1926)	1
University and Bellevue Hospital Medical College		(1927)	1
University of Buffalo School of Medicine		(1925), (1926)	2
Eclectic Medical College, Cincinnati		(1927)	1
University of Oregon Medical School		(1926)	1
Meharry Medical College		(1923), (1927)	2
University of Tennessee College of Medicine		(1927)	1
University of Vermont College of Medicine		(1925)	1
Medical College of Virginia		(1926)	1
Dalhousie University Faculty of Medicine		(1923)	1
McGill University Faculty of Medicine		(1926)	1
Queen's University Faculty of Medicine		(1927)	1
University of Vienna, Austria		(1918)*	1
University of Naples, Italy		(1916), (1922),* (1923, 3)	5
University of Palermo, Italy		(1919), (1920),* (1922)*	3
University of Rome, Italy		(1920)	1
Donskoy University, Rostoff on the Don, Russia		(1919)*	1
University of Madrid, Spain		(1920)*	1
University of Berne, Switzerland		(1910)	1
University of Lausanne, Switzerland		(1901)	1
Osteopath			1

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement with
George Washington University Medical School		(1920)	Porto Rico
Bowdoin Medical School, Brunswick		(1919)	Maine
Baltimore Medical College		(1913)	Penna.
Johns Hopkins University School of Medicine		(1919) (1922) N. B. M. Ex.; (1926) N. B. M. Ex.	Canada
Harvard University Medical School		(1914), (1922), (1923)	N. B. M. Ex.
University of Michigan Medical School		(1923), (1926)	N. B. M. Ex.
Creighton University School of Medicine		(1911)	Nebraska
Cornell University Medical School		(1925)	N. B. M. Ex.
Jefferson Medical College of Philadelphia		(1890) (1926) N. B. M. Ex.	Diploma
University of Pennsylvania School of Medicine		(1923)	N. B. M. Ex.
University of Pittsburgh School of Medicine		(1921)	Penna.
Vanderbilt University School of Medicine		(1926)	N. B. M. Ex.
University of Virginia Department of Medicine		(1926)	Virginia
University of Toronto Faculty of Medicine		(1916)	Canada
University of Berlin, Germany		(1920)	Colorado
University of Moscow, Russia		(1916)*	Diploma

Mr. Hamilton also reports that 16 candidates were passed on review during 1927. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Arkansas School of Medicine		(1927)	1
Georgetown University School of Medicine		(1927)	1
University of Louisville School of Medicine		(1927)	2
Harvard University Medical School		(1927)	1
Creighton University School of Medicine		(1926)	1
University and Bellevue Hospital Medical College		(1927)	1
University of Buffalo School of Medicine		(1925)	1
University of Oregon College of Medicine		(1926)	1
University of Tennessee College of Medicine		(1927)	1
McGill University Faculty of Medicine		(1926)	1
Queen's University Faculty of Medicine		(1927)	1
University of Naples, Italy		(1923)	1
University of Rome, Italy		(1920)	1
University of Lausanne, Switzerland		(1901)	1
Osteopath			1

* Verification of graduation in process.

California December Reciprocity Report

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports that 23 candidates were licensed by reciprocity from October to December, 1927. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1891)	Oregon
Northwestern University Medical School		(1906) (1909) Wisconsin	Illinois, Washington
Rush Medical College		(1898) Iowa; (1904)	Illinois
University of Illinois College of Medicine		(1916)	Illinois
Central College of Phys. and Surgs., Indianapolis		(1891)	Michigan
Drake University College of Medicine, Des Moines		(1896)	Iowa
State University of Iowa College of Medicine		(1908) (1910) Iowa	S. Dakota
University of Michigan Medical School		(1900) Ohio; (1908)	Oregon
Beaumont Hospital Medical College, St. Louis		(1900)	Missouri
Missouri Medical College, St. Louis		(1898)	Missouri
St. Louis University School of Medicine		(1923)	Missouri
University Medical College of Kansas City		(1903)	Kansas
Cotner University Medical Department		(1913)	Nebraska
Columbia University College of Phys. and Surgs.		(1896)	New York
Eclectic Medical College, Cincinnati		(1906)	Texas
Jefferson Medical College of Philadelphia		(1912)	Penna.
University of Pennsylvania School of Medicine		(1919)	Iowa
University of Turin, Italy		(1904)*	Nevada

* Verification of graduation in process.

Colorado October Examination

Dr. Philip Work, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Oct. 4, 1927. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 10 candidates examined, 9, including an undergraduate, passed, and an osteopath failed. Nineteen candidates were licensed by reciprocity and 1 candidate was licensed by endorsement of his credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1927)	76.3,* 84.3, 85.3,* 89.7*
St. Louis College of Phys. and Surgs.		(1926) 82.4; (1927)	81.7, 84.2
University of Szegedin, Hungary		(1921)†	75
Undergraduate			81
	FAILED		
Osteopath			65.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois College of Medicine		(1897)	Iowa
Drake University College of Medicine		(1910)	Iowa
University of Kansas School of Medicine		(1914), (1926)	Kansas
College of Physicians and Surgeons, Baltimore		(1910)	Montana
Johns Hopkins University School of Medicine		(1926)	Dist. Colum.
Maryland Medical College, Baltimore		(1912)	Tennessee
Detroit College of Medicine and Surgery		(1918)	Michigan
American Medical College, St. Louis		(1908)	Missouri
Barnes Medical College, St. Louis		(1905)	Missouri
Ensworth Medical College, St. Joseph		(1910)	Missouri
St. Louis College of Physicians and Surgeons		(1902)	Illinois
St. Louis University School of Medicine		(1926)	Kansas
New York Homeopath Med. College and Flower Hosp.		(1910)	New York
University of Cincinnati College of Medicine		(1925), (1927)	Ohio
Western Reserve University School of Medicine		(1905)	Ohio
Vanderbilt University School of Medicine		(1920)	Tennessee
Queen's University Faculty of Medicine		(1924)	N. Dakota

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College		(1927)	U. S. Navy

* This candidate will receive his M.D. degree on the completion of one year's internship in a hospital.

† Verification of graduation in process.

Iowa October Examination

Mr. H. W. Grefe, director of Examinations and Licensure, Iowa Department of Health, reports the written examination held at Des Moines, Oct. 4-7, 1927. The examination covered 8 subjects and included 100 questions. An average of 75 per cent was required to pass. Six candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Loyola University School of Medicine		(1927)	89.4,* 90.1*
Washington University School of Medicine		(1927)	84.6
University of Nebraska College of Med.		(1926) 84.8; (1927)	92.6
University of Munich, Germany		(1913)	85.3

Mr. Grefe also reports that 21 candidates were licensed by reciprocity, July 1, 1927. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University School of Medicine		(1926)	Dist. Colum.
Northwestern University Medical School		(1925)	Illinois
Rush Medical College		(1903), (1926), (1927)	Illinois
University of Illinois College of Medicine		(1927, 2)	Illinois
Harvard University Medical School		(1905)	Maine
University of Minnesota Medical School		(1926)	Minnesota
Marion-Sims College of Medicine, St. Louis		(1899)	Utah
St. Louis University School of Medicine		(1924), (1926)	Missouri
Washington University School of Medicine		(1926)	Missouri
Creighton University School of Medicine		(1926)	Nebraska
University of Nebraska College of Med.		(1922), (1926, 2) (1926) Oklahoma	Nebraska
Western Reserve University School of Medicine		(1918)	Ohio
Marquette University School of Medicine		(1927, 2)	Wisconsin

* This candidate will receive his M.D. degree on the completion of one year's internship in a hospital.

Book Notices

NUTRITION AND DIET IN HEALTH AND DISEASE. By James S. McLester, M.D., Professor of Medicine at the University of Alabama. Cloth. Price, $8 net. Pp. 783. Philadelphia: W. B. Saunders Company, 1927.

Modern knowledge of nutrition is essentially a contribution of the past quarter century. Time has hardly been sufficient for proper systematization of available facts or for organization of the knowledge toward practical use. This is the task attempted by Dr. McLester in his new book on the subject, and he has succeeded notably in beginning to make order out of chaos. The material falls naturally into two parts—diet in health and diet in disease. Before further considerations are attempted it is necessary to provide the reader with knowledge of basal metabolism and the purpose of food in the human economy. While the author's book is complete up to the date of its issue, its discussion of vitamins is already incomplete, owing to the fact that literature in this field grows daily. Like other authors who write on nutrition, Dr. McLester leans heavily on the works of McCollum and of Sherman, which are basic.

While the first half of the book is essentially a contribution to preventive medicine, the second half deals with treatment of disease. Here the author considers all the nutritional disturbances, such as diabetes, gout, obesity, kidney disease and digestive disorders. In every instance, he provides adequate considerations of dietary detail, so that the book is one of the most practical volumes available for the physician who is concerned with the treatment of disease by dietary modifications. It is, of course, understood that every modern physician does concern himself with dietary methods. The volume supplies excellent recipes for the use of liver diets in pernicious anemia.

The third part of the book is devoted to tabular references collected from many sources, and extremely useful. A good index supplements one of the best available reference works on this subject.

FINANCIAL ADVICE TO A YOUNG MAN. A Program for Getting Along in the World. By Merryle Stanley Rukeyser, Associate in Journalism, Columbia University. Cloth. Price, $3. Pp. 410. New York: Simon & Schuster, 1927.

The writings of Mr. Rukeyser are more intimately known to the readers of THE JOURNAL through two articles of a series that have already been published in our columns. The author was formerly financial editor of the New York *Herald Tribune* and the New York *Evening Journal*, and is an instructor in finance at Columbia University. His previous book on the subject, "The Common Sense of Money and Investments," had an excellent chapter for physicians. The present volume tells the young man how to pick a good job, warns him away from "patent medicine" schemes in finance, and instructs him concerning the disposition of such funds as he may accumulate. To any serious young man who needs guidance in the beginning of a career, the book is bound to be valuable.

HERZHINTERWAND UND OESOPHAGEALE AUSKULTATION. Von Dr. S. Bondi, Privatdozent für innere Medicin an der Universität Wien. Paper. Price, 8.40 marks. Pp. 114, with 32 illustrations. Vienna: Julius Springer, 1927.

In the large amount of literature that has appeared, especially in recent years, little attention has been given to investigation of the posterior aspect of the heart, or to methods of study that would show deviations from the normal relations of this aspect to the adjacent viscera lying posterior. Utilization of the esophagus as a means of approach has also received little consideration. In this compact and well written volume the author describes the normal anatomy of the posterior aspect of the heart and great vessels, and its topographic relations. Pathologic variations are then described, and methods of investigation by the roentgen ray and by dorsal percussion and auscultation. The observations in different pathologic conditions are described. The second portion of the book is devoted to esophageal auscultation of the heart. After a brief historical summary the author describes the form of stethoscope which he has found most advantageous: a binaural stethoscope of the ordinary type, the tubes uniting at about the same place as is usual, and then separating, to one tube being affixed a tube bearing a bell for auscultation of the chest wall, and to the other a tube which can be passed down the esophagus. For the latter a reconstructed male catheter is used of sufficient stiffness to allow of easy change of position in the esophagus, and of a caliber and length adapted to the patient. The communications between the tubes allow the sounds to be transmitted from the distal end of either tube or both, and the esophageal tube may be closed by an ordinary pinchcock. The methods of the use of this instrument are described, and the results of observation in normal and pathologic cases. The clinical usefulness of esophageal auscultation is a matter of opinion, but the book itself has much of value to those interested in heart disease. It is adequately illustrated and has a full index to the literature.

MODERN ASPECTS OF THE DIAGNOSIS, CLASSIFICATION AND TREATMENT OF TUBERCULOSIS. By J. Arthur Myers, Associate Professor of Preventive Medicine, Medical and Graduate Schools, University of Minnesota. With an introduction by David A. Stewart, Associate Professor of Medicine, Manitoba University. Cloth. Price, $5.50. Pp. 271, with 54 illustrations. Baltimore: Williams & Wilkins Company, 1927.

The book presents nothing new, although the whole subject of tuberculosis is pretty well covered. It does not impress one as showing much original work on the part of the author, but does indicate a broad knowledge of recent progress. There is considerable quoted matter, perhaps too much. Careless proofreading is evident in the occasional misspelled words. The section on diagnostic points might have been more elaborated to good advantage, but must, as given, be characterized as rather weak. The chapter on the history of tuberculosis is especially interesting, more so, in fact, than is usually observed in similar writings on this subject.

THE PROHIBITION MANIA. A Reply to Professor Irving Fisher and Others. By Clarence Darrow, and Victor S. Yarros. Cloth. Price, $2.50. Pp. 254, with illustrations. New York: Boni & Liveright, 1927.

Not long ago Prof. Irving Fisher, sometimes known as an economist in Yale University but perhaps better known to the medical profession as a cooperator with E. L. Fisk in the work of the Life Extension Institute, issued a book which purported to prove that prohibition had been a tremendous contribution to American advancement and that the Volstead law could be enforced. Messrs. Darrow and Yarros calmly dissect Professor Fisher and prove at least to the satisfaction of this reviewer that the learned economist was unfair in his attitude, inaccurate in his publication of data, confused in his logic, and in general not quite the unbiased critic that an economist should be. Of course, Professor Fisher admits at once that he has not pretended to be unbiased in this matter; but every reader ought to know this at least. The authors of the present volume are themselves fanatical supporters of personal liberty, and apparently not adverse to the joys long associated with the imbibition of ethyl alcohol. The conclusions of Mr. Darrow and Mr. Yarros are that present conditions are intolerable, that there is no evidence of any substantial good from prohibition, that it interferes with personal liberty, that our laws cannot be enforced, that the legislation contradicts both science and common sense, and that something ought to be done about it.

EPIDEMIC ENCEPHALITIS (Encephalo-Myelitis). By Leo M. Crafts, B.L., M.D. Cloth. Price, $3. Pp. 237, with illustrations. Boston: Richard G. Badger, 1927.

While this book contains the main facts about encephalitis, it is marred by having been rushed to the printers at an undeveloped stage. One gets the impression that it has been talked into a dictaphone, transcribed, and printed without editing or proofreading. It abounds in queerly constructed and incomplete sentences and misspellings. Among the latter are: "endrocarditis," "apolpectoform," "crystolic soufle," "erruptions." As for sample sentences: Page 151: "She developed unusual symptoms affecting the facial muscles, hypertonic and paretic combined, illustrates the effect of later pregnancy in some cases, the child however escaping infection and indicates what variant syndromes may finally gravi-

tate into the Parkinsonism state in the end." Page 80: "Botulism usually occurs in groups, very rarely in encephalitis." "Following this there was some difficulty in swallowing and would hold tablets in mouth. Became completely silent. Following this quickly came stupor, then coma, stertor at times and transitory Cheyne-Stokes breathing coming and going." Altogether the book in its present form is not a credit to its creators. Even the binding is poor.

ATLAS DER HISTOTOPOGRAPHIE GESUNDER UND ERKRANKTER ORGANE. Von Dr. Erwin Christeller, Direktor der pathologisch-anatomischen Abteilung des städtischen Rudolf Virchow-Krankenhauses. Cloth. Price, 90 marks. Pp. 20, with 88 plates. Leipsic: Georg Thieme, 1927.

Beautiful reproductions from photographs in three colors illustrate the minute features of disease in entire organs or in large portions of them. They are one of the results of enlarging the surface of the container for carbon dioxide snow so that sections as large as 4 or 6 inches in diameter can be made with the freezing microtome. The sections are then stained in various ways and slightly magnified when photographed. As a consequence, disease is represented on a large scale and in most of the illustrations as though viewed through a hand lens. To a large extent the lesions portrayed are simply those encountered in routine postmortem examinations or in the gross examination of diseased structures soon after removal and while still fresh. In place of the normal colors, such as yellow fat, shades of red from blood, natural parenchyma colors, bile and other staining seen when fresh tissues are examined, the gross disease illustrated in this atlas is artificially colored and slightly enlarged. But the atlas has another and perhaps a greater value in the highly effective demonstration of the advantages of having such large microscopic sections in which disease may be studied with the unaided eye, as well as with a wide range of equipment for microscopic examination. Such large sections have been made heretofore after celloidin or paraffin infiltration requiring weeks or months and with huge expensive microtomes and knives. The similar large microscopic preparations made from frozen tissues and used to secure the photographs used in this atlas may be useful in other ways. Like the ordinary small microscopic preparations, they may be projected on a screen or, after mounting with a white background, many may be hung vertically so as to swing in frames about a central standard. The atlas, therefore, is to be commended as an exhibit of what may be obtained by a modification of apparatus used for preparing tissues for microscopic examination.

PRIMARY STUDIES FOR NURSES. A Text-Book for First Year Pupil Nurses Containing Courses of Studies in Anatomy, Physiology, Chemistry, Hygiene, Bacteriology, Therapeutics and Materia Medica, Dietetics and Invalid Cookery. By Charlotte A. Aikens. Sixth edition. Cloth. Price, $3.25. Pp. 572, with 142 illustrations. Philadelphia: W. B. Saunders Company, 1927.

Five previous editions of this volume attest its usefulness to nurses. It is not a textbook of any single subject, but a general guide to almost everything in the nursing field. It makes no attempt to discuss the theories of physics, chemistry or biology, but it does give enough of all these subjects to attract the nurse's interest.

ANGINA PECTORIS. The Anatomy, Physiology and Surgical Treatment. By Walter B. Coffey, M.D., F.A.C.S., Chief Surgeon, Southern Pacific Company; Philip King Brown, A.B., M.D., Medical Director, Southern Pacific Hospital, and John Davis Humber, B.S., M.D., Surgeon, Southern Pacific Company. Cloth. Price, $6.50. Pp. 393, with illustrations. New Orleans: A. J. Dickerson, 1927.

This is a summary of the clinical and experimental work of the authors on the surgical aspects of angina pectoris. Much of this work, already reported and therefore familiar to readers, is here reviewed. Rules governing the selection of cases suitable for operation are given, due emphasis being placed on electrocardiographic observations. The operation for resection of the superior cervical ganglion is described. Then follow a description of the gross anatomy of the sympathetic nervous system and a report of the extensive experimental work of the authors. The book must be consulted to get their views as to the nature of angina, its relation to the aorta and the coronary arteries and the nerves, and the place of surgery in the treatment of the condition. No surgeon contemplating an operation of this character should fail to consult it. It will prove for long a valuable reference book. The highest praise must be given the illustrations showing the operation of superior cervical sympathectomy. They are truly illuminating and make the various steps remarkably clear. The same praise is due the plates showing the anatomy of the sympathetic nerves. Unfortunately, the extensive bibliography that completes this book seems to have been compiled by a layman without medical knowledge rather than by a physician. There are numerous references which indicate that the compiler of the bibliography was unable to distingush between various forms of angina. The bibliography is full of typographic errors, and some of the German words are grossly distorted.

LA ELECTROCARDIOGRAFÍA EN EL DIAGNÓSTICO DE LAS ENFERMEDADES DEL CORAZÓN. Por C. Cortés. (Traducida del catalán.) Paper. Price, 4 Ptas. Pp. 139, with 45 illustrations. Barcelona: Arnau de Vilanova, 1927.

Following a detailed review of the embryology, anatomy and physiology of the heart, the fundamental principles of the electrocardiograph with their application in the diagnosis of organic heart lesions are discussed. Numerous electrocardiographic tracings are inserted throughout.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

DIE BESTIMMUNG DER WASSERSTOFFIONENKONZENTRATION VON FLÜSSIGKEITEN. Ein Lehrbuch der Theorie und Praxis der Wasserstoffzahlmessungen in elementarer Darstellung für Chemiker, Biologen und Mediziner. Von Dr. med. Ernst Mislowitzer, Privatdozent für physiologische und pathologische Chemie an der Universität Berlin. Paper. Price, 24 marks. Pp. 378, with 184 illustrations. Berlin: Julius Springer, 1928.

Highly technical contribution to physiologic chemistry.

BAKTERIOLOGISCHES TASCHENBUCH. Die wichtigsten technischen Vorschriften zur bakteriologischen Laboratoriumsarbeit. Von Prof. Dr. Otto Olsen, a. o. Professor für Hygiene und Bakteriologie an der Universität Berlin. Twenty-eighth edition. Cloth. Price, 3.30 marks. Pp. 166. Leipsic: Curt Kabitzsch, 1927.

Brief guide to the technic of the bacteriologic laboratory.

WHAT YOU SHOULD KNOW ABOUT HEALTH AND DISEASE. By Howard W. Haggard, Associate Professor of Applied Physiology, Yale University. With an introduction by Yandell Henderson. Cloth. Price, $5. Pp. 538, with 74 illustrations. New York: Harper & Brothers, 1928.

A well written but at times complicated explanation of the human body and its activities.

RECENT ADVANCES IN OPHTHALMOLOGY. By W. Stewart Duke-Elder, M.A., D.Sc., Ph.D., Assistant Ophthalmic Surgeon, St. George's Hospital. Cloth. Price, $3.50. Pp. 343, with 77 illustrations. Philadelphia: P. Blakiston's Son & Company, 1927.

Literary summary of recent additions to knowledge in this special field.

AIDS TO GYNÆCOLOGY. By Richard E. Tottenham, B.A., M.D., D.P.H., Professor of Obstetrics and Gynæcology, University of Hong Kong. Seventh edition. Cloth. Price, $1.25. Pp. 131, with 25 illustrations. New York: William Wood & Company, 1927.

Brief handbook with English background.

PROBLEMS IN PSYCHOPATHOLOGY. By T. W. Mitchell, M.D. Cloth. Price, $3.50. Pp. 190. New York: Harcourt, Brace & Company, Inc., 1927.

Lectures with particular reference to the permanent value of Freud's conceptions.

DIE INNERE BEHANDLUNG VON HAUTLEIDEN. Heft 5. Von Sanitätsrat Dr. S. Jessner, Königsberg i. Pr. Fourth edition. Paper. Price, 2.50 marks. Pp. 57. Leipsic: Curt Kabitzsch, 1927.

Internal medicine for dermatologists.

DIE CHIRURGIE. Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner, und Prof. Dr. O. Nordmann. Band IV. Teil 2. Lieferung 20. Die Chirurgie der Lungenerkrankungen. Von Prof. Dr. W. Jehn. Die Chirurgie des Brustkorbes. Von Prof. Dr. A. Schubert. Paper. Price, 19 marks. Pp. 549-738, with 129 illustrations. Berlin: Urban & Schwarzenberg, 1927.

THE NOTIFIABLE DISEASES-PREVALENCE IN STATES, 1926. Supplement No. 67 to the Public Health Reports. Treasury Department-United States Public Health Service. Hugh S. Cumming, Surgeon General. Paper. Price, 10 cents. Pp. 67. Washington: Government Printing Office, 1927.

GLASGOW ROYAL MATERNITY AND WOMEN'S HOSPITAL. Medical Report for the Year 1926. By J. N. Cruickshank, M.D., F.R.F.P.S., M.R.C.P., Registrar to the Hospital. Boards. Pp. 74. Glasgow: William Hodge & Company, Ltd., 1927.

STUDY OF A GROUP OF ALMSHOUSES IN CONNECTICUT, NEW JERSEY, NEW YORK, AND PENNSYLVANIA. By the Woman's Department of the National Civic Federation. Paper. Pp. 95. New York, 1927.

RULES AND REGULATIONS FOR THE PREPARATION AND SUBMISSION OF PLANS FOR SYSTEMS OF SEWERAGE AND SEWAGE AND WASTE DISPOSAL. 1927. Paper. Pp. 28. Albany, 1927.

FIFTEENTH ANNUAL REPORT OF THE ATLANTIC COUNTY MOSQUITO EXTERMINATION COMMISSION, 1927. Paper. Pp. 28, with illustrations. Atlantic City, 1927.

CARNEGIE CORPORATION OF NEW YORK. Report of the President and of the Treasurer for the Year Ended September 30, 1927. Paper. Pp. 77. New York, 1927.

PROCEEDINGS OF THE EIGHTEENTH ANNUAL CONVENTION OF THE INTERNATIONAL CLAIM ASSOCIATION. Cloth. Pp. 85. New York, 1927.

TRANSACTIONS OF THE CHICAGO PATHOLOGICAL SOCIETY. Vol. XII. No. 5. Paper. Pp. 289-370, with illustrations. Chicago, 1927.

Miscellany

DEFINITION OF ANTHROPOLOGY

Anthropology may be defined most briefly as human biology. It is a study of man's origin, evolution, differentiation into races and types, and of the changes now going on in man, with their indications for the future. In substance it is but advanced human anatomy, physiology, chemistry and pathology. Its fundamental distinctive character lies in the fact that it deals with human groups, rather than with individuals, and that all its work is of a comparative, rather than simply descriptive, nature. It is essentially the study of human differentiation, of the human life-cycle in all its phases, and of human variation. It deals with the causes as well as the ways and effects of change in man's structure and function, studying the influence on man of all the factors which have ever affected him in the past or are now affecting him, whether in health or in disease. It is deeply concerned in the phenomena of heredity, fixation of new characters, degeneration and restitution. Its ultimate objects are so to understand man and all that is capable of affecting him that it may aid in safeguarding him from dangers and point out the lines of behavior for favorable further developments. The aim of anthropology is an ever more thorough knowledge of the physical man, and on the basis of that knowledge the furthering of future human development, while the aim of scientific medicine is the prevention or cure of derangements of man and thus the removing of obstacles to his onward development. Two so closely allied branches of human endeavor cannot but supplement each other and work in close cooperation. Anthropology studies and shows the gradual development of man from lower forms. This will help the medical man better to understand the still numerous imperfections and consequences of human evolution, some of which may at any time call for his intervention. Anthropology studies the consequences of man's domestication and civilization—medicine is commonly called on to correct the defects resulting from those conditions. Anthropology studies the laws of human ontogeny, that is, of human development from the ovum onward under different conditions, in different races, and medicine tries to overcome and prevent the defects or abnormalities of the same vital phenomena. Anthropology knows now and teaches that every part of man, every function, and even every perversion of function, occurs not in a unique, fixed, stereotyped form, but with a substantial and characteristic range of variation, and possibly in a number of types each of which has again its own range of normal variation. All this cannot but be of wide and deep significance and help to medicine. Anthropology learns the trends, weaknesses, defects of whole human groups which may call for the general aid of medicine. It sees advantages and dangers on the onward biologic road of individual human groups which call for broad medical attention. Anthropology is helping to light, medicine to clear, the road of eugenic, further human evolution.—Hrdlička, Aleš: Anthropology and Medicine, *Am. J. Physical Anthropology* **10**:2 (Jan.-March) 1927.

NOMENCLATURE OF DRUGS

A correspondent has sent us the following complaint. He read in an American article a strong recommendation of a drug called methenamine as a urinary antiseptic. Inquiries made by the dispensers of his hospital failed, however, at first to identify any drug of this name, and it was only after some trouble that our correspondent learned from America that methenamine was the title adopted by the tenth edition of the United States Pharmacopeia for hexamine. This is a very typical example of the confusion that is bound to arise if more than one official name exists in the same language for a single drug. We know that similar confusion is constantly arising in regard to many other common drugs which have different titles in this country and in the United States. In this particular instance the actual history of the nomenclature of the drug is as follows. The substance hexamethylene tetramine became known to the medical profession under the proprietary title of urotropine. It was included in the British Pharmacopeia, 1914, under the title hexamine, and in the United States Pharmacopeia IX, 1916, with the name hexamethylenamine. Although these titles were not identical, yet they were sufficiently alike to prevent confusion, but unfortunately in 1926 the name was changed to methenamine in the United States Pharmacopeia X. We understand that this change was made because it was felt to be desirable to shorten the name, and unfortunately proprietary rights were claimed in the United States of America over the name hexamine. Some similar reason will usually be found in most cases where a variegated official nomenclature for a single drug puzzles and annoys the practitioners of medicine. Such histories obviously indicate a very unsatisfactory state of affairs. Medical literature is international, and this is true in a special sense of all medical literature written in the same language. There is every advantage in having only one official name in the English language for any particular drug. One difficulty is that a large proportion of new drugs are introduced as proprietary articles, and it will usually be necessary for the medical profession to endure one change of name when such drugs are first introduced into the pharmacopeia. There is, however, no reason why more than one such change should be inflicted, and it is to be hoped that some international agreement will be obtained to insure that, when a name has once been introduced as an official pharmacopeial name in either the United States or this country, it shall be free from capture as a proprietary name, and shall be adopted as the official name in both countries. The value to the medical profession of official names for drugs that have been introduced under proprietary titles is that an official and nonproprietary name often reduces the price of a drug by throwing its manufacture open to competition, but if the official names do not succeed in establishing themselves in common use they fail to serve this purpose. Now the task of obtaining a satisfactory official name for any drug that has been established under a proprietary title is always likely to be difficult, because the most suitable and obvious names are just the ones which are most likely to be subject to proprietary right. Moreover, the proprietary name usually has a long start of the official name. If in addition to these unavoidable handicaps the official names differ in different countries, it must often happen that the official names will be ignored and the proprietary names retained in use.—Editorial, *Brit. M. J.* **2**:1153 (Dec. 17) 1927.

Medicolegal

"Morphine" and "Cocaine" Cover Their Hydrochlorides

(Hoffman v. United States (U. S.), 20 Fed. R. (2d) 328)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment of conviction of defendant Hoffman of violating the Harrison Narcotic Law, says that it was urged that there was a fatal variance between the indictment and the evidence. The basis of this was that the third count of the indictment alleged the sale of morphine, when the evidence disclosed the sale of morphine hydrochloride, and the fourth count charged possession of morphine and cocaine, when the evidence showed morphine hydrochloride and cocaine hydrochloride. But the term "morphine," as used in the third count of the indictment, covered "morphine hydrochloride," and the terms "morphine" and "cocaine," as used in the fourth count of the indictment, covered "morphine hydrochloride" and "cocaine hydrochloride." This court, in *Mathews* v. *United States*, 15 Fed. (2d) 139, 143, laid down the test of fatal variance as follows: "Was defendant misled? Will defendant be protected against a future proceeding?" The tests laid down in that case were met here. The defendant was in no way mislead. She denied any sales whatever. She was sufficiently protected against a future proceeding for the same sales and the same possession. The objections that the evidence proved a different drug from that charged in the indictment were hypercritical.

Contraction of Streptococcus Septicemia—Wearing Masks

(Moore v. Fidelity & Casualty Co. (Calif.), 258 Pac. R. 375)

The Supreme Court of California, in reversing a judgment rendered in favor of the plaintiff as the beneficiary of a combined disability and accident policy having the caption "Business Women's Disability Policy," says that indemnity was provided therein for bodily injury suffered through accidental means and resulting in disability or death, and illness resulting in disability. The insured was a graduate nurse. On the third day that she attended a patient in a hospital who was suffering from *Streptococcus hemolyticus* beta, or streptococcus septicemia, commonly known as blood poisoning, she was attacked by the same malady and died ten days later.

It was to be determined whether the showing made by the plaintiff was sufficient to establish that the insured suffered death by reason of "bodily injury sustained . . . through accidental means" as provided in the policy. It was assumed for the purposes of this case that the contraction of the infection by the insured was a bodily injury, but this court is unable to conclude that such injury was caused by accidental means. The term "accident" is defined as "a casualty —something out of the usual course of events, and which happens suddenly and unexpectedly, and without any design on the part of the person injured." In the case at bar the means through which the malady was contracted by the insured was neither unusual nor unexpected. There was no element of surprise in coming in contact with the virulent organisms. In fact, such contact was foreseen and expected. The insured knew and realized the dangers incident to the performance of her duties as an attending nurse, and by gargling, washing her hands, etc., took precautions to guard against the effect of the incident exposure. The fact that others similarly exposed did not contract the disease was not sufficient to prove that the insured contracted it by accidental means. That such persons did not fall a prey to what was an expected and anticipated attack from the germs would show no more than that their resistance was greater and the attack unsuccessful. Effect must be given to the plain language of the policy, and a distinction must be made between the result to the insured and the means by which that result was brought about. It may properly be said that the result to the insured, namely, illness and death, was unexpected and unintentional; but that is far from saying that the means that produced the illness and subsequent death were unexpected, unusual or not anticipated. This court concludes, therefore, that the death of the insured was not through "acidental means," and that the finding and conclusion of the trial court to the contrary effect were without support in the evidence.

It was contended by the plaintiff that, as the defendant knew at the time the policy was issued that the insured was a trained nurse by occupation, it should be held that the defendant should be bound to indemnify against risks it knew it was the insured's duty to incur in the course of her occupation. It was pointed out that the policy was headed as indicated above, and it was urged, in effect, that it must have been contemplated by the parties to the contract that death caused as a result of risks incident to the occupation of the insured should be indemnified against, and also as matter of law that policies of insurance should be liberally construed in favor of the insured. The rule of law asserted cannot be disputed, but there must be an opportunity for its application. Here it may not be contended that the policy in one of its two main characteristics was not a business women's disability policy. The caption did not by its terms or effect enlarge, detract from, modify or restrict the insuring clause for bodily injuries resulting in death by accidental means.

It was stipulated at the trial that none of the physicians, interns or nurses in attendance on the patient and none of the relatives or friends who visited him wore masks, and that none of the persons mentioned became infected from the patient except the insured. But this court deems these facts of no controlling consequence for the reason that it was in evidence, uncontradicted, that while masks are some protection against infection "they are not a good protection." From the evidence it might be reasonably, if not necessarily, inferred that while the wearing of gauze masks is a protection to some extent, the infection may be contracted, notwithstanding the wearing of such masks.

Services Rendered One Person at Request of Another

(Swarens v. Amel (Mo.), 296 S. W. R. 849)

The Kansas City (Mo.) Court of Appeals says that this was a suit in two counts, arising in a justice court. The first count prayed judgment for $377 for medical services rendered by the plaintiff to defendant Pfnisel, and the second count prayed judgment for $50 for surgical services rendered to Pfnisel by a surgeon who had assigned his account to the plaintiff. The justice rendered judgment against both defendants for the full amount prayed, and defendant Amel alone appealed to the circuit court, where the case was tried without the aid of a jury, resulting in a judgment against Mrs. Amel on both counts. Mrs. Amel was a widow and a cousin of Pfnisel, who boarded with her and who had been severely burned in a gasoline explosion at the cleaning establishment where he worked. The plaintiff testified that at Mrs. Amel's request he made several trips to the hospital to which Pfnisel had been taken, and reported that his condition prevented his being removed; but later he was removed to her home, where the plaintiff treated him for about three months. The plaintiff testified further that Mrs. Amel promised to pay him; that Pfnisel did not at any time say anything about employing him; that he did not charge Mrs. Amel on his books for these services but made his charge solely against Pfnisel because he was employed by several companies to treat their employees and always made the charge on his books against the employee treated, although he intended to charge the companies for his services. Pfnisel testified that he regarded the bill as too large and offered to pay $100 in settlement, which offer the plaintiff refused. The insurance company settled with Pfnisel, but the doctor's bill was never paid by Pfnisel or by Mrs. Amel. Mrs. Amel denied that she promised to pay for the services to be rendered to Pfnisel.

On her appeal from the judgment of the circuit court, Mrs. Amel insisted that that court erred in refusing to give her peremptory declaration of law at the close of all the testimony because her alleged promise to pay the plaintiff, not being in writing, was void under the statute of frauds (section 2169, revised statutes of Missouri of 1919). The

court of appeals thinks that this contention was well taken, and reverses the judgment which was rendered for the plaintiff against Mrs. Amel, but, deeming its decision in conflict with that of the Springfield court of appeals in the case of *Mitchell* v. *Davis*, 190 S. W. 357, certified and transferred this case to the supreme court of Missouri.

Ordinary the question as to whom the credit was given is one for the jury, and although the plaintiff's books charged Pfnisel alone for the service rendered, this might not be controlling as a matter of law; but the fact that the plaintiff sued both Pfnisel and Mrs. Amel, alleging that he and the surgeon rendered services at the special instance and request of both defendants and prayed judgment against both defendants and obtained judgment against them, the judgment against Pfnisel having become a final judgment, showed beyond any question that some credit was given Pfnisel. The plaintiff in view of his conduct cannot now say that the credit was extended to Mrs. Amel alone. Another circumstance (but probably one for the trial court sitting as a jury) strongly showing that some credit was extended to Pfnisel, was the fact that the plaintiff presented a bill made out to Pfnisel to the latter's attorney for payment. While he testified that he did this at the request of Mrs. Amel, there was no testimony that Pfnisel was indebted to Mrs. Amel and that Mrs. Amel, intending to pay the bill, referred the plaintiff to Pfnisel's attorney for its payment out of money owing her by Pfnisel. The effect of the plaintiff's conduct in this regard was that he acquiesced in her request that Pfnisel be looked to for payment of the bill. Some suggestion was made in the plaintiff's brief that a joint promise was shown, but there was no merit in that contention. Pfnisel was unconscious at the time the alleged contract of employment was entered into and the plaintiff was quite positive in his testimony that the credit was extended to Mrs. Amel alone and not in any respect to Pfnisel.

Delusions as Test of Insanity and as Affecting Deed

(Ferguson Seed Farms, Inc., v. McMillan et al. (Texas), 296 S. W. R. 902)

The Court of Civil Appeals of Texas, in affirming a judgment canceling a deed executed in September, 1924, says that plaintiff McMillan alleged that, at the time of the execution and delivery of the deed to the defendant, he was of unsound mind and was totally lacking in the mental capacity to execute a valid deed conveying the property in question; that he was caused and impelled by such diseased mental condition to execute said deed. The jury found that he was impelled by an insane delusion to execute the deed, and this court is of the opinion that this finding was supported by a preponderance of the testimony. The testimony showed that his insanity was of a recurrent or intermittent type, and that he disposed of this property while under the delusion that, if he retained it, it would result in his insolvency. The true test of the presence or absence of insanity has been stated to be the presence or absence of delusion; insanity being always marked by delusions, which indicate an abnormal condition of the mind, and their absence being characteristic of a sound mind. It appeared from all the testimony in this case that when the plaintiff's physical health was good and the nervous tension or strain incident to the conduct of his business affairs was not extreme, there were no insane delusions such as had afflicted him in 1914, and at the time of the execution of the deed to the defendant. The fact that his trouble in 1914 was ten years prior to the execution of the deed to the defendant the court thinks was not so remote as to render evidence of it inadmissible. It would seem that the question is one of degree only. The further off the evidence is carried, the weaker it may be, but it is still evidence and should be considered. No general time limit can be fixed that will control in all cases. When it was shown that, under the same conditions of health, and in connection with similar business transactions, in 1914, the plaintiff acted from the same delusion under which he acted in 1924, it occurs to this court, when considered in the light of the testimony of the physicians who testified, that the evidence was admissible, although ten years had intervened between the two transactions.

Infirmities and Deeds—Physician and Nurse Privilege

(Meyer et al. v. Russell (N. D.), 214 N. W. R. 857)

The Supreme Court of North Dakota, in reversing a judgment which set aside a deed to property the grantor of which was alleged to have been mentally incompetent at the time of the execution of the deed, holds that impairment of faculties by disease or old age will not invalidate a deed, provided the grantor fully comprehended its meaning and effect, and was able to exercise his will in executing it.

The court also holds that communications to a nurse are not privileged under subdivision 3, section 7923, compiled laws of North Dakota of 1913, unless they are made when the nurse is acting as the assistant or agent of a physician, and in such case, if the communications are received or heard from a patient, and are necessary to enable the physician to prescribe or act for the patient, then the privilege extended to the physician applies equally to the nurse, and such communications are privileged. A general objection to the testimony of a nurse is not sufficient; the objection should be made to each question calling for privileged information, so that the court can determine whether or not the information was acquired by the nurse while assisting the physician.

No unfavorable inference can be drawn against a party to an action for objecting to the testimony of a physician, on the ground that such testimony is privileged, nor for the failure to call the physician as a witness.

Insufficient Plea of Former Acquittal of Practicing

(McCoy v. State (Texas), 296 S. W. R. 574)

The Court of Criminal Appeals of Texas, in overruling a motion for a rehearing, after affirming a judgment of conviction of defendant McCoy, a chiropractor, of violating the medical practice act, says that the defendant interposed a plea in bar on the ground of former acquittal. In the plea it was averred that on Feb. 6, 1926, he was charged with "unlawfully practicing medicine upon Mrs. Vera Spann and divers other persons." On the trial he was acquitted. The present trial was on an information charging that on Sept. 1, 1926, he did unlawfully practice on J. R. Cassidy. There was no specific averment as to the identity of the transactions. If the words "divers other persons" were effective to charge an offense in treating any person other than Mrs. Spann, which is very doubtful, the plea, in failing to aver that Cassidy was one of the "other persons," fell short of the legal requirement that such plea must show the identity of the transaction. The only averment on that subject in the plea was that "the facts in the Spann case and the Cassidy case are the same." To avail himself of the plea of former acquittal, the transaction must be the same, and the two indictments sustainable by the same proof. Moreover, the statute seems to negative the sufficiency of the plea in that each day would be a separate offense, and apparently each person treated would likewise be a separate offense. The nature of the criminal act is one applicable to an individual, and not to a collection of individuals.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 17-20. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association of Anatomists, Ann Arbor, April 5-7. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American College of Physicians, New Orleans, March 5-9. Mr. E. R. Loveland, The Covington, 37th and Chestnut Streets, Philadelphia, Sec'y.

American Society for the Control of Cancer, New York, March 3. Dr. Thomas M. Debevoise, 26 Broadway, New York, Secretary.

Louisiana State Medical Society, Baton Rouge, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Pacific Coast Oto-Ophthalmological Society, Santa Barbara, April 18-20. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.

Tennessee State Medical Association, Nashville, April 10-12. Dr. H. H. Shoulders, Lambuth Building, Nashville, Secretary.

Tri-States Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Tenn., February 29-March 2. Dr. A. F. Cooper, Bank of Commerce Building, Memphis, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American J. Physical Anthropology, Philadelphia

11: 1-148 (Oct.-Dec.) 1927

Human Ilium: Sex and Stock. W. L. Straus, Jr., Cleveland.—p. 1.
Brain of Helen H. Gardener (Alice Chenoweth Day). J. W. Papez, Ithaca, N. Y.—p. 29.
Middorsal Hair Whorl of Man. F. Wood-Jones, Honolulu.—p. 89.
Cusp Development on Second Lower Molars in Bantu and Bushmen. J. C. M. Shaw, Johannesburg.—p. 97.
Frequency and Distribution of Fossa Pharyngea in Human Craniums. H. B. Collins, Jr., Washington, D. C.—p. 101.
Femur: V. At Birth. N. W. Ingalls, Cleveland.—p. 107.
*Children on "All Fours." A. Hrdlička, Washington, D. C.—p. 123.

Children Walking on All Fours.—Five additional cases of children running on all fours are reported by Hrdlička. The total number of reported individual cases showing this physiologic peculiarity now reaches eleven, of which five are in white Americans. No sex difference is as yet noticeable. The peculiarity begins to manifest itself evidently about the tenth month and may last a variable time. So far, only single instances of the phenomenon have been reported from individual families.

American Review of Tuberculosis, Baltimore

17: 1-102 (Jan.) 1928

*Infraclavicular Tuberculous Infiltrations. M. Fishberg, New York.—p. 1.
Physical Signs Over Cavity in Pulmonary Tuberculosis. K. Dunham and A. P. Derby, Cincinnati.—p. 22.
*Bronchoscopic and Surgical Treatment of Pulmonary Suppuration. E. A. Graham, St. Louis.—p. 33.
Hospitalization for Tuberculous. J. A. Britton, Chicago.—p. 42.
Isolation of Tubercle Bacilli from Septic Material. H. C. Sweany and M. Evanoff, Chicago.—p. 47.
*Granules of Tubercle Bacillus. H. C. Sweany, Chicago.—p. 53.
*Filtrability of Tubercle Bacillus. H. C. Sweany, Chicago.—p. 77.
Nonprotein Tubercle Bacillus Antigen. M. Pinner, Northville, Mich.—p. 86.
Local Immunization of Guinea-Pigs Against Tuberculosis by Intracutaneous Infection with Tubercle Bacilli of Low Virulence. G. G. Ornstein and M. M. Steinbach, New York.—p. 93.

Infraclavicular Tuberculous Infiltrations.—Fishberg reports cases of early pulmonary tuberculosis in which the lesion is located below the clavicle, and not in the apex. In most cases the onset is insidious; the patient has a mild cough, may or may not lose in weight for many weeks or months, has at times a slight subfebrile temperature, and tires easily. Most of these cases are not recognized as early as would be desired, either because the patient does not feel sick enough to consult a physician or, even if he does consult one, because no decisive physical signs are found. These cases are recognized by some striking symptoms, such as a pulmonary hemorrhage; by finding tubercle bacilli in the sputum, or, what is most decisive, by a roentgen-ray examination of the chest. Even with a good roentgenogram the lesion may be overlooked when it is small, and located toward the periphery of the lung field, as roentgenologists expect to find the lesion above the clavicle. Available evidence tends to show that these infiltrations are caused by endogenous or metastatic reinfections from foci dormant since childhood. In other instances, they appear to be merely allergic reactions of lung tissue around slight, hitherto dormant, tuberculous lesions.

Treatment of Pulmonary Suppuration.—Graham is convinced that the mortality in any large series of cases of chronic pulmonary suppuration will inevitably be high, because in about 10 per cent of the cases there will be an associated carcinoma of the lung, either primary or metastatic; and in about another 10 per cent cerebral suppuration, either brain abscess or meningitis, will be present. Various auxiliary measures to operation are important, particularly rest in bed, neoarsphenamine in spirochetal cases, properly directed heliotherapy, blood transfusions and a liver diet for the anemia (the latter following the suggestion of Murphy and Minot for pernicious anemia), and a high caloric diet. It is also possible that iodized oil may have some slightly beneficial therapeutic effect, although it is difficult to understand how it could be of much avail.

Granules of Tubercle Bacillus.—A study has been made by Sweany of the granules of the tubercle bacillus in tuberculous lesions in man and in guinea-pigs. No rule has been observed regarding the cause of granule formation because the granules exist in apparently favorable environments, and do not exist sometimes in an unfavorable environment. Granules in certain stages of their life cycle can be made to sprout and reproduce acid-fast micro-organisms. They can, in other stages, be caused to sprout into actively motile bacilli that resemble certain young forms seen in bouillon cultures. These are nonacid-fast and motile. It is thought possible also that such forms may remain nonacid-fast in certain environments. Other granules apparently have been observed to degenerate into coccoid forms resembling *Staphylococcus tetragenus*. Others apparently go through a gonidiform stage, in which granules are held together in a matrix, and may sprout again in a way similar to that in free granules. These granules are capable of producing tuberculosis in guinea-pigs when picked out by the single cell method. They are also capable of producing pure cultures of tubercle bacilli. A semi-acid-fast moldlike growth was also obtained having tuberculogenic properties, and ultimately regaining complete acid-fast properties on animal passage. Very small doses of granules produce atypical and chronic tuberculosis, while a typical form results from larger doses.

Filtrability of Tubercle Virus.—Sweany asserts that a virus exists in tuberculous lesions that is capable of passing through the finest Berkefeld filters and producing varying grades of disease in guinea-pigs, depending on the particular virus. Some viruses produce an emaciation and death without any signs of tuberculosis when passed through one, two or three animals. Some are capable of regenerating a typical tuberculosis from which typical tubercle bacilli may be recovered. An atypical tuberculosis may result from the first filtrate, especially in that from the coarser filters, which, on animal passage, will also produce typical tuberculosis. During the process there seems to be a stimulation of the lymphoid tissue in the lungs and a progressive action on the reticulo-endothelial elements, producing in some animals giant cells of the Sternberg-Reed type, and approaching gradually the more typical anatomic formations of tuberculosis. This fact alone proves that some of the filtrable forms are not tubercle bacilli; yet they possess sufficient intrinsic quality to regenerate tubercle bacilli on passage. It suggests also a relationship to lymphogranuloma.

Annals of Surgery, Philadelphia

87: 1-160 (Jan.) 1928

Ventricular Punctures. W. Sharpe, New York.—p. 1.
*Spongioblastoma Multiforme of Brain. L. Davis, Chicago.—p. 8.
*Rôle of Dura Mater in Cranial Decompressive Operations. C. A. Elsberg, New York.—p. 15.
*Acquired Arteriovenous Fistula. W. M. Yater, Rochester, Minn.—p. 19.
Coronary Disease in Surgical Patients. A. E. Phelps, New York.—p. 32.
*Association of Hyperthyroidism with Diabetes. H. J. John, Cleveland.—p. 37.
Congenital Cystic Dilatation of Common Bile-Duct. B. C. Willis, Rocky Mount, N. C.—p. 48.
Cholangeitis Following Cholecystenterostomy: Case. O. H. Wangensteen, Minneapolis.—p. 54.
*Cystic Lymphangioma of Greater Omentum. P. M. Grausman and H. L. Jaffe, New York.—p. 66.
Abdominal Incisions. I. M. Boykin, Philadelphia.—p. 74.
*De Petz Stomach and Intestinal Suturing Apparatus. J. Loessl, Debreczen, Hungary.—p. 80.
*Carcinoma of Ovary in Infancy. V. C. Hunt and H. E. Simon, Rochester, Minn.—p. 84.
Acid and Alkali Burns of Eye: Experimental Study. K. W. Cosgrove and W. B. Hubbard, Detroit.—p. 89.
Indelible Ink-Pencil Injuries. H. Milch, New York.—p. 95.
Chromoma of Forearm. A. E. Hertzler, Halstead, Kan.—p. 99.
Formation from Bone Graft of Radius Congenitally Absent. F. H. Albee, New York.—p. 105.
*Use of Flexed Plaster Spica Cast in Treatment of Hip Fractures. G. A. Moore, Brockton, Mass.—p. 111.
Untoward Effects of Narcotics and Anesthetics on Robust and Handicapped Patients. J. L. Yates and F. Raine, Milwaukee.—p. 124.

Metastases from Cerebral Tumor.—In Davis' case, metastases from a spongioblastoma multiforme situated in the left temporal lobe occurred in the right arm, left lung and the soft tissues over the right scapula and the left costal margin.

Rôle of Dura Mater in Decompression Operation.—Elsberg asserts that in states of increased intracranial pressure, a perfectly satisfactory decompression can be obtained if only the outer dural layer is excised, preserving the inner layer. The outer layer is used for the plastic closure of dural defects.

Acquired Arteriovenous Fistula.—Four cases of acquired arteriovenous fistula are reported by Yater. In three cases, a determination of the oxygen content of blood taken from a vein in the region of the fistula revealed the presence of arterial blood in the venous channel. This test is suggested as a pathognomonic criterion in all cases in which there is doubt as to the presence of an arteriovenous anastomosis.

Association of Hyperthyroidism with Diabetes.—The association of diabetes with hyperthyroidism is not regarded as a rare occurrence by John. When this association does occur, the diabetes usually develops after the onset of the hyperthyroidism. The appearance of glycosuria in a case of hyperthyroidism should never be disregarded, but a blood sugar determination two and one-half hours after a heavy carbohydrate meal or else a dextrose tolerance test should be made in order to determine whether or not the glycosuria indicates a diabetic or prediabetic status. The treatment of diabetes associated with hyperthyroidism does not vary from the treatment of diabetes without this complication, with the exception that, because of the increased metabolism in cases of severe hyperthyroidism, a diet of much higher caloric value than the usual diabetic diet is necessary, and consequently much more insulin is required. Thyroidectomy improved carbohydrate tolerance in all cases of diabetes associated with hyperthyroidism in which diabetes is mild in character; in most of these cases, insulogenic function is restored to normal status.

Cystic Lymphangiomas of Omentum.—Grausman and Jaffe believe that cystic lymphangiomas are true blastomas arising in the greater omentum from undifferentiated mesenchyme which is capable of producing lymphatic vessels by proliferation of lymphangioblasts. Many of these newly formed lymphatic vessels become enlarged and cystic, because of the blocking of the outlets and possibly because they are blind vessels. Some of the original lymphatic vessels are also obstructed and show secondary changes such as dilatation and proliferation of the endothelium. The authors believe that the preformed lymphatics are not involved in the tumor growth.

De Petz Gastro-Intestinal Suture Apparatus.—In fifty-eight cases of resection of the stomach, the de Petz stomach and intestinal sewing apparatus was successfully employed by Loessl in applying the provisional occluding suture in ten cases of carcinoma of the stomach, in seventeen cases of pyloric ulcer, in thirty cases of duodenal ulcer, and in one case of tuberculous gastric ulcer. The passage was reestablished in all cases by means of gastrojejunostomy.

Carcinoma of Ovary in Infant.—The patient was only 17 months old. She had appeared normal at birth and had been well until six weeks previous to examination, when pertussis had developed. One month before there had been a slight blood-tinged vaginal discharge resembling menstrual flow. This lasted for only a few days, but reappeared three days previous to examination. The mother had noted also that the breasts were unusually large and that there was an excessive amount of pubic hair. There had been moderate loss of weight. Two weeks before a mass had been felt in the abdomen, which was enlarging rapidly and had already reached the level of the umbilicus. Hunt and Simon removed a tumor of the right ovary weighing 1,000 Gm. and measuring 11 by 15 cm. Carcinoma of the ovary associated with multiple cysts was diagnosed.

Treatment of Hip Fracture.—Moore reports further on his method of treatment of hip fracture by placing the injured leg in a position of abduction, flexion and internal rotation, or approximately in a normal sitting position, and having it so held by a plaster spica case during the period of healing.

Archives of Neurology and Psychiatry, Chicago

19: 1-200 (Jan.) 1928

Unsolved Problems Suggested by Cerebellar Connections and Cerebellar Histology. O. S. Strong, New York.—p. 1.
*Vasomotor and Pilomotor Manifestations: Their Localizing Value in Tumors and Lesions of Spinal Cord: Thirteen Verified Cases. T. Fay, Philadelphia.—p. 31.
Functions of Cerebellar Nuclei as Determined by Faradic Stimulation. F. R. Miller and N. B. Laughton, London, Ont.—p. 47.
*Resorption of Cerebrospinal Fluid Through Choroid Plexus. H. S. Forbes, F. Fremont-Smith and H. G. Wolff, Boston.—p. 73.
Cerebellar Symptomatology: Evaluation on Basis of Intracerebellar and Extracerebellar Lesions. M. Keschner and M. Grossman, New York. —p. 78.
*Forced Conjugate Upward Movement of Eyes Following Epidemic Encephalitis. E. W. Taylor, Boston, and C. A. McDonald, Providence, R. I. —p. 95.
*Oculo-Auricular Associated Movement: Possible Utility as Test of Function of Facial Nerve. R. M. Brickner, Baltimore.—p. 104.
*Erythrocyte Sedimentation Reaction: Value in Psychiatry. J. Goldwyn, Worcester, Mass.—p. 110.
Long Section Blood Sugar Tolerance Study in Case of Depression. T. Raphael, W. G. Ferguson and O. M. Searle, Ann Arbor, Mich.—p. 120.
*Kafka Paraffin Reaction in Spinal Fluid. L. J. Karnosh and A. J. Rademaekers, Cleveland.—p. 125.
*Toxic Infectious Disease in Peripheral and Central Nervous System—So-Called Neuronitis. S. Brock and M. Ivimey, New York.—p. 129.

Localization of Upper Level of Spinal Cord Lesions.—A simple method for the accurate determination of the upper level of lesions and tumors of the spinal cord is outlined by Fay. In thirteen verified cases, which are reported, the vasomotor line of demarcation has proved to be the most reliable sign; in each case it has determined the exact level of localization. In all the cases, a history of a lesion of the spinal cord was evident. The Queckenstedt test was positive for partial or complete block. The zone of hyperalgesia corresponded exactly with the upper level of vasomotor demarcation. A point of tenderness to deep pressure was found in each case over the spinous processes at the level of the lesion. From the surgical standpoint, the vasomotor level indicates the root level for operative exploration and, in those cases coming to operation, has proved to be correct, even though the sensory tests in some would indicate a lower position of the lesion in the cord. The vasomotor line of demarcation will frequently indicate the level of the lesion before the development of sensory or motor symptoms of focal value. This vasomotor sign, when associated with a positive Queckenstedt test and a zone of hyperalgesia corresponding to the level of vasomotor demarcation (trauma and evidence of vertebral disease having been ruled out by history or roentgen ray), has been found so far only in lesions producing pressure on the spinal cord. The earliest appearance of this sign was noted fourteen hours after injury to the cord, and the longest duration was twenty-eight years following a spinal lesion.

Resorption of Cerebrospinal Fluid Through Choroid Plexus.—Prussian blue granules were found by Forbes et al. within the vessels of the choroid plexus in each of the twelve animals examined. This indicates that the direction of the flow of cerebrospinal fluid through the choroid plexus may be reversed by increasing the osmotic pressure of the blood. These observations add to the accumulating evidence that the choroid plexus may be regarded as a semipermeable membrane and the cerebrospinal fluid as a true dialysate.

Conjugate Movement of Eyes After Epidemic Encephalitis.—Thirteen cases are reported by Taylor and McDonald. The symptom consists essentially of a forced upturning of the eyeballs, coming on in intermittent attacks and lasting a varying time. There are no discoverable constant subjective symptoms associated with the spasmodic movement, and it obviously cannot be classified as hysterical. The movements of the eyes in the thirteen cases were predominantly upward; in eight instances, this was the only movement described; in four, this was combined with lateral movement; in one, there was slight external rotation of the right eye, and in one, downward alternated with upward movement. Associated movements of the head occurred in five cases, and in some of these they appeared to be semivoluntary to supplement the strained position of the eyes. The frequency of the attacks varied widely from those that occurred daily to those that occurred two or three times a week; in general, the intervals

were more than twenty-four hours. Furthermore, there was no constant interval between the attacks. In one instance, fatigue and embarrassment seemed to increase the frequency. The duration of the individual seizures was likewise most variable, ranging from one or two minutes to nine or ten hours. Between these extremes were attacks that occurred at intervals of half an hour or a few hours, again without constancy of time in individual cases. The treatment, largely by scopolamine, was definitely effective in eight cases; in two, it was without result. The disappearance of the spasm when the patient lay down was striking in several cases. At times this was the only way in which the spasm could be overcome. One patient was obliged to lie on the right side to accomplish the desired result. In one instance, however, the opposite occurred; the patient at times was unable, because of the spasm, to close the eyes at night and was thereby prevented from sleeping.

Oculo-Aural Phenomenon of Wilson and Stannus.—Two hundred persons have been examined by Brickner in a study of the oculo-aural phenomenon of Wilson and Stannus. It was found that the oculo-aural response is present in cases of paralysis agitans. Therefore, it is unlikely that the reaction is one of the automatic associated movements supposedly mediated through the corpus striatum and the substantia nigra. A striking diminution is demonstrated in the range of the movement in the presence of weakness of the facial nerve of even slight degree. The possibility of using the phenomenon in determining the presence or absence of lesions of the facial nerve in doubtful cases is discussed.

Erythrocyte Sedimentation Reaction in Psychiatric Cases.—The erythrocyte sedimentation reaction was determined by Goldwyn in ninety-two cases of dementia praecox, eighteen cases of alcoholic psychoses, fourteen cases of senile psychoses, seven cases of cerebral arteriosclerosis, twelve cases of general paralysis, thirteen cases of manic depressive psychoses, twelve cases of involutional melancholia and thirty cases of other types of psychoses. Increased readings were found in all cases of senile psychoses; psychoses due to cerebral arteriosclerosis, general paralysis and neurosyphilis; psychoses showing mental deficiency or somatic disease; acute types of alcoholic psychoses, and in many cases of epileptic psychoses and involutional melancholia. In dementia praecox, the simple and paranoid types tend to give normal readings, while the hebephrenic and chiefly the catatonic types tend to give slightly accelerated reactions. Cases showing marked mental deterioration give increased readings. No case of dementia praecox showed a marked increase unless complicated by some physical disorder.

Kafka Paraffin Reaction in Spinal Fluid.—The Kafka paraffin colloidal test on spinal fluid is recommended by Karnosh and Rademaekers as a simple and reliable procedure admirably suited to the small laboratory attached to the hospital ward and to the private office. The test compares favorably with that of the gum mastic as far as results are concerned.

Toxic Infectious Disease of Nervous System.—Five nonfatal cases are reported by Brock and Ivimey, illustrating toxic or infective processes involving the peripheral nerves and the central neuraxis. A simple nomenclature is suggested in which the term neuritis is retained—peripheral neuritis for processes limited to the distal parts of the nerve trunks; radiculitis, for involvement of the roots, and central neuritis (spinal, medullary, pontile) for involvement of the neuraxis. When more than one part of the nervous system is implicated, these terms may easily be compounded.

Archives of Surgery, Chicago

16: 1-168 (Jan., Part I) 1928

*Metastases of Bone in Primary Carcinoma of Lung: Endotheliomas of Bones. E. F. Hirsch and E. W. Ryerson, Chicago.—p. 1.
*Sinus Pericranii (Reducible Blood Tumor of Cranium): Origin and Relation to Hemangioma and Abnormal Arteriovenous Communication: Case. E. V. Hahn, Indianapolis.—p. 31.
*Chronic Appendicitis. H. Koster, New York.—p. 44.
*Pathogenesis of Goiter Considered as One Continuous Disease Process. A. E. Hertzler, Halstead, Kan.—p. 61.
*Relation of Hyperthyroidism to Benign Tumors of Thyroid. W. F. Rienhoff, Jr., and D. Lewis, Baltimore.—p. 79.
*Nodular Goiter with Hyperthyroidism. H. M. Thomas, Jr., Baltimore.—p. 117.
Duodenal Regurgitation as Factor in Neutralization of Gastric Acidity. I. Y. Olch, St. Louis.—p. 125.
*Surgical Scarlet Fever: Case. T. B. Jones and L. A. Kohn, Rochester, N. Y.—p. 139.
*Collapse Following Sudden Decompression of Distended Abdomen: Experimental Ascites. O. H. Wangensteen and H. G. Scott, Minneapolis.—p. 144.
Thirty-Fourth Report of Progress in Orthopedic Surgery. P. D. Wilson, Boston, and Others.—p. 153.

Metastases to Bone in Primary Lung Cancer.—Hirsch and Ryerson present a detailed report of four cases of primary carcinoma of the lung with metastases in one or more bones. One of the patients was a boy, aged 6. A year before he died, tissues of the tumor of the bone were diagnosed metastatic carcinoma, and at that time a careful physical examination failed to disclose the primary tumor. The bone metastases caused the chief symptoms in these four cases.

Sinus Pericranii: Communicating Hemangioma of Pericranium.—Hahn proposes the term "sinus pericranii" to designate a hemangioma of the pericranium communicating with intracranial blood sinuses and characterized by distinctive symptoms. A case of sinus pericranii of traumatic origin is reported. A cure was effected by resection of the extracranial hemangioma. The use of electrocoagulation to control bleeding of emissary veins is reported. Arteriovenous communications of capillary dimensions were demonstrated in the specimen obtained at operation. Such communications provide a dynamic explanation of the origin of sinus pericranii. Histologic evidence that the hemangioma in this case was due to abnormal arteriovenous communications is interpreted as reinforcing Reid's conclusions that all simple hemangiomas are of such origin.

Chronic Appendicitis.—According to Koster, dull aching pain or intermittent and colicky pain in the right lower quadrant of the abdomen may be referable to organic or to functional disturbances in the appendix, and from a purely pathologic basis it is not correct to group all the conditions of the appendix responsible for this pain under the heading "chronic appendicitis"; nor is it fair to assume that unless appendixes show all the evidences of a chronic inflammation they cannot be the cause of the symptoms. Until it becomes possible to recognize a difference, clinically, between the symptoms produced by a chronic inflammation of the appendix and those produced by kinks, adhesions, strictures and other lesions, it is suggested that the term chronic appendicitis be discarded entirely by the clinician as a preoperative diagnostic cognomen, and that "appendicular colic" be substituted.

Pathogenesis of Goiter.—Various stages in the development of the goitrous disease rather than separate types are postulated by Hertzler. The first is the colloid stage (adolescent goiter); the second is the chronic toxic stage (toxic adenoma); the third is the acute toxic stage. The toxic stage is always associated with increased proliferation of the gland. The so-called exophthalmic goiter differs from the so-called toxic adenoma in degree and in rapidity of development but not in kind. This paper is based on a study of 1,000 cases.

Hyperthyroidism and Benign Thyroid Tumors.—Rienhoff and Lewis present a brief analysis of 109 consecutive cases of nodular goiter with hyperthyroidism in which the patients were operated on during the last year, together with a review of 910 cases of hyperthyroidism. In 92 per cent of the cases of nodular goiter with hyperthyroidism, the nodular elements did not represent true benign neoplasms or adenomas. Careful examination of these nodules revealed the fact that the pattern suggests the microscopic appearance of hypertrophy and hyperplasia rather than that seen in recognizable neoplasms of the thyroid gland. It would seem that the morbid processes may involve only limited regions of the thyroid, not only in the more active states as evidenced by the localized areas of hypertrophy and hyperplasia, but in the less active and inactive states, as shown by the delimited and sharply defined areas of hyperinvolution, the parenchyma between these affected regions apparently being normal. In 34 per cent of the cases in this study, the nodular element of the thyroid was composed of involutional bodies. In 58 per cent the nodular goiter had resulted from a regional involvement of the parenchyma by the same pathologic process, so

that it would appear that the formation of a nodular goiter must be considered as one of the final stages or pathologic sequelae of the clinical entity, hyperthyroidism. In only a relatively small percentage (8 per cent) was the nodular element due to a true benign neoplasm. The older patients with hyperthyroidism associated with a nodular goiter are those who have survived the disease long enough for the nodules to develop in the thyroid glands. The terms "toxic adenoma" and "hyperfunctioning adenomatous goiter" are considered to be incorrect and misleading. In the small percentage of cases in which true benign neoplasms are associated with hyperthyroidism, the histologic manifestations of hyperactivity of the parenchyma have been demonstrated throughout the gland as a whole, so that the neoplasm should be regarded merely as a coincidental pathologic lesion. There is no proof that the secretion of a benign tumor can affect the organism as a whole, or that it can give rise to toxic manifestations. At present, it is impossible to make a differential clinical diagnosis between a true benign neoplasm, an involutional nodule and a tumor resulting from a localized area of hypertrophy and hyperplasia with involution in a patient with hyperthyroidism. Nodular goiter with or without hyperthyroidism and diffuse goiter with or without hyperthyroidism would seem to be more accurate and equally efficacious clinical distinctions.

Nodular Goiter with Hyperthyroidism.—In a series of thirty-two cases designated as instances of nodular goiter with hyperthyroidism, sections from the gland in every instance revealed areas of hypertrophy and hyperplasia of the thyroid epithelium. Patients in the age group below 45 years showed pathologic changes closely simulating those of exophthalmic goiter, and their disease is classified by Thomas as mild, pure hyperthyroidism. Patients in the age group above 45 years nearly all presented morbid conditions, such as heart failure, hypertension, obesity or anemia, which, when augmented by more or less slight hyperthyroidism, constitute a serious clinical picture. A close parallelism is seen between the degree of hypertrophy and hyperplasia of the thyroid epithelium and that of thyrotoxicosis. These cases of nodular goiter with hyperthyroidism seem to differ from cases of exophthalmic goiter chiefly in the degree of thyrotoxicosis, and occur mainly in elderly persons who are suffering also from other conditions which disturb the circulatory mechanism. These facts seem to be in accord with Rienhoff's hypothesis that 92 per cent of nodules in the thyroid gland are the result of a long standing or frequently recurring overactivity of the thyroid gland.

Surgical Scarlet Fever.—In the case reported by Jones and Kohn, a small abrasion infected with *Streptococcus scarlatinae* gave rise to a cellulitis of the leg. The patient was susceptible to scarlet fever, as determined by the Dick test. He developed typical scarlet fever, but there was no angina at the height of the disease. Most of the classic features appeared, including strawberry tongue, although fortunately there were no complications. The blanching test was positive. There was a prompt response to the administration of therapeutic antitoxin.

Collapse Following Sudden Decompression of Distended Abdomen.—Wangensteen and Scott caution that when the markedly distended abdomen is incised, the same precaution of decompressing it slowly, as in paracentesis of the abdomen or chest, should be observed. In practice, circulatory collapse following incision of such an abdomen apparently does not occur with any degree of regularity. The possibility of such an occurrence, however, exists and should be borne in mind.

16: 169-450 (Jan., Part II) 1928

Extrapleural Resection of Esophagus. F. Torek, New York.—p. 171.
Experimental Abscess of Lung in Dog. S. J. Crowe and J. E. Scarff, Baltimore.—p. 176.
*Etiology of Abscess of Lung. D. S. Allen, St. Louis.—p. 179.
*Unresolved Pneumonia. O. C. Pickhardt, New York.—p. 192.
Nontuberculous Pulmonary Suppuration. H. Lilienthal, New York.—p. 206.
*Abscess of Lung Relieved by Bronchoscopy. J. D. Kernan, New York.—p. 215.
*Nontuberculous Bronchopulmonary Suppurative Lesions: Treatment by Artificial Pneumothorax. W. Whittemore and G. M. Balboni, Boston.—p. 228.
*Acute Pulmonary Suppuration: Selective Action of Artificial Pneumothorax. C. Eggers and J. D. Kernan, New York.—p. 279.
*Relation of Bronchopulmonary Suppuration to Empyema. A. O. Wilensky, New York.—p. 288.
Empyema Problem. A. L. Lockwood, Toronto.—p. 297.
*Cough: Action on Material in Tracheobronchial Tract. E. Archibald, Montreal, and A. L. Brown, San Francisco.—p. 322.
*Infections of Lymph Nodes of Bronchial Tree. W. Lerche, St. Paul.—p. 338.
Thoracic Surgery in America. W. Meyer, New York.—p. 360.
Suppurative Pericarditis: Three Cases. E. W. Peterson, New York.—p. 366.
Lipomas of Mediastinum. E. A. Graham and E. R. Wiese, St. Louis.—p. 380.
Diaphragmatic Hernia. S. W. Harrington, Rochester, Minn.—p. 386.
*Preliminary Medication in General Anesthesia. J. T. Gwathmey and C. W. Hooper, New York.—p. 416.
*Persistent Nontuberculous Pneumothorax: Two Cases. L. T. LeWald, New York.—p. 426.
*Recurrent Spontaneous Pneumothorax: Three Cases. E. E. Watson and C. Robertson, Salem, Va.—p. 431.

Etiology of Lung Abscess.—Allen reports on the experimental production of abscesses of the lung by aspiration of warm pus from patients with chronic abscess of the lung, and the translation of these experimental observations into some of their clinical correlatives.

Surgery in Unresolved Pneumonia.—As approximately 36.5 per cent of pulmonary conditions diagnosed as unresolved pneumonia will become frankly surgical conditions, Pickhardt feels that the thoracic surgeons should be consulted more frequently when pneumonia does not resolve promptly and properly.

Bronchoscopy in Abscess of Lung.—Of the 103 cases seen by Kernan, twenty-seven followed tonsillectomy and twelve were a sequel of pneumonia. In twenty cases the cause was not clear; nine cases were caused by foreign bodies, and eight by exposure to cold. Sixty-eight of the 103 patients were treated by bronchoscopy. Three or more bronchoscopies were performed on these sixty-eight patients; thirty-one were cured, as they did not have cough, sputum or fever, but later, two developed some other disease and died. Of the others, fifteen were improved, nine were not traced, nine are dead and four are under treatment. The patients that seemed to respond best to bronchoscopy were those on whom this operation was performed following tonsillectomy. Of the twenty-seven patients on whom bronchoscopy was performed following tonsillectomy, fifteen were cured. Of the patients not cured by bronchoscopy, three died. Four were operated on; three of these recovered, and one died. Five have not been traced. One death may be attributed to bronchoscopy. Bronchoscopy had been performed on this patient about ten times; following the fatal bronchoscopy he sat up on the table, commented on how well he felt, and fell back in a convulsion. He died in twenty-four hours. At autopsy, an embolus was found in the brain.

Artificial Pneumothorax in Lung Abscess.—Artificial pneumothorax was attempted by Whittemore and Balboni in eighteen cases of abscess of the lung. Two patients were completely cured and remained so, the treatment being kept up twenty-four and fifteen weeks, respectively. In two cases, there was temporary improvement (one patient died a year later of bronchopneumonia). Partial pneumothorax brought about improvement in all the symptoms in one patient; fifteen months after the suspension of the pneumothorax, the patient died of an embolus. There have been three deaths due to hemorrhage from the lung during treatment. In these three cases, a partial pneumothorax was created, but the lobe from which the bleeding came was adherent either to the wall of the chest or to the diaphragm, and pneumothorax was ineffective. Improvement did not occur in two cases, and in three, a satisfactory pneumothorax could not be produced. Empyema complicated the situation in five cases during the treatment. Operation was performed in all cases. Three patients were entirely cured by drainage; one is still under treatment, and one died. In the five cases of bronchiectasis one patient was cured after eighty weeks, and one was improved but is still under treatment after twenty-eight weeks. In one case in which the condition was bilateral, pneumothorax was maintained on one side only. After fifty-two weeks, considerable improvement resulted; then an

empyema developed, and death resulted several days after operation. In the other two cases, a satisfactory pneumothorax could not be produced.

Artificial Pneumothorax in Lung Abscess.—Eggers and Kernan report a case of abscess of the lung that strikingly illustrates what may happen if air is allowed to enter the pleural cavity of a patient with suppuration in one lobe, without adhesions and with free bronchial communication. The patient made a complete recovery.

Relation of Bronchopulmonary Suppuration to Empyema.—Of eighty-eight cases of empyema, approximately 25 per cent were complicated by some form of bronchopulmonary suppuration. In practically all, the clinical course seemed to indicate that the empyema was secondary to the intrapulmonary lesion. Several of the cases occurred during a general infection, and it seems equally possible that the empyema and the pulmonary abscess were independent lesions. Most of the other cases followed pneumonia. These cases are analyzed by Wilensky. In approximately 71 per cent of the cases, some form of bronchopulmonary fistula existed which communicated with the operative wound in the wall of the chest by way of the empyema cavity. The pulmonary suppurations occurred in the form of soft abscesses, and they were frequently multiple. There was only one case in which an abscess existed which resembled the hard indurated form so commonly seen after a variety of other causes, as, for example, after tonsillectomy. In this series of eighty-eight cases of empyema, the wounds of all but three of the patients who recovered healed completely after primary operation and remained healed. With few exceptions, the postoperative convalescence was uneventful.

Action of Cough on Material in Bronchi.—The experimental results of the action of cough on iodized oil, iodized oil-sputum emulsion and thick, tenacious sputum which had been injected intratracheally into cats are presented by Archibald and Brown. It was observed that cough alone increased the rapidity and degree of penetration of iodized oil and iodized oil-sputum emulsion; this was even more marked when tracheal compression was applied, thus showing an actual "in driving" action of cough. A similar "in driving" action of cough on thick tenacious sputum was not noted. It is concluded that cough may tend to drive fluid substances similar to iodized oil deeper into the pulmonary tree, and that it is incapable of like action on a heavier substance, such as thick tenacious sputum.

Infections of Lymph Nodes of Bronchial Tree.—Lerche asserts that inhaled dusts, after entering the pulmonary lymphatics, are carried in the lymph current toward the central depot, i. e., the tracheobronchial nodes, and so are bacteria, whether inhaled or blood-borne. On their journey toward the tracheobronchial nodes, bacteria may be intercepted and settle in lymphoid masses or bronchopulmonary nodes. Tuberculous as well as nontuberculous suppuration occurs in these nodes. The tracheobronchial and particularly the bronchopulmonary lymph nodes may be potent factors in the causation of bronchiectasis in childhood. Lerche pleads for the use of the terms "tracheobronchial" nodes and "bronchopulmonary" nodes, instead of hilum nodes, bronchial nodes, nodes at the root of the lungs and other terms.

Preliminary Medication in General Anesthesia.—The preliminary medication suggested by Gwathmey and Hooper for clinical purposes is an injection of morphine sulphate, ⅛ grain (8 mg.) dissolved in 2 cc. of magnesium sulphate solution (50 per cent). This is to be repeated once or twice at twenty or thirty minute intervals, according to the age, weight and general condition of the patient. If an idiosyncrasy is present, it will develop before the time for the third dose. One-fourth grain (16 mg.) of morphine is usually sufficient for women. If the patient is to be put to sleep entirely, the authors give, in addition to the hypodermic injections, a small dose of ether, 2½ ounces (75 cc.), by rectum; paraldehyde, 2 drachms (7.5 cc.) and olive oil, sufficient to make 4 ounces (120 cc.). If nitrous oxide and oxygen are used, the oxygen should be increased to 30 or 50 per cent, instead of the usual 9 or 10 per cent. If procaine hypochloride is used for the skin and the peritoneum, the same percentage is required as would be used if preliminary medication had not been given. If chloroform and ether are used, only a few drops are required.

Persistent Nontuberculous Pneumothorax.—In one of the cases reported by LeWald, the collapse persisted for slightly more than a year; in another case the lung has failed to expand after eleven years, and apparently the collapse is permanent.

Recurrent Spontaneous Pneumothorax.—In one of the cases reported by Watson and Robertson, the patient had spontaneous collapse of first one and then the other lung over a period of five years; in the second case, the patient had two collapses eight months apart, and in the third case there were fourteen collapses on the two sides and at one time a bilateral collapse. In none of these cases was there evidence of organic pathologic change in the lungs. In a fourth patient, who is still under treatment, the lung has collapsed twice, but there is definite evidence of an early pulmonary tuberculous lesion.

Arkansas Medical Society Journal, Little Rock

24: 151-166 (Jan.) 1928

Leukemia. J. H. Fowler, Harrison.—p. 151.
Replacement Therapy. J. H. McCurry, Cash.—p. 154.
Ascites Treated Surgically. R. C. Dorr, Batesville.—p. 159.

California and Western Medicine, San Francisco

28: 1-144 (Jan.) 1928

*Diets for Expectant and Nursing Mothers. W. D. Sansum, Santa Barbara.—p. 33.
Trend of Gastric Surgery. J. H. Woolsey, San Francisco.—p. 38.
Gastro-Intestinal Symptoms Masking Gallbladder Disease. C. G. Toland, Los Angeles.—p. 42.
Pelvic Floor: Anatomy and Mechanics. A. W. Meyer, Palo Alto.—p. 45.
Ambulatory Treatment of Peptic Ulcer. F. B. Taylor, Oakland.—p. 48.
Bacteriology of Rheumatic Endocarditis. J. C. Ruddock, Los Angeles.—p. 51.
*Insulin and Intravenous Glucose Injections for Vomiting of Pregnancy. C. H. Lewis, Santa Monica.—p. 54.
Renal Surgery: Pitfalls and Complications. C. P. Mathé, San Francisco.—p. 57.
Sensitization Phenomena in Dermatology. H. J. Templeton, Oakland.—p. 64.
Electrodiathermy in Treatment of Benign and Malignant Lesions of Uterine Cervix. F. M. Mikels, Long Beach.—p. 67.
Lure of Medical History: Paracelsus. J. Oliver, San Francisco.—p. 72.
Premature Rupture of Fetal Membranes: Case. J. L. Pritchard, San Jose.—p. 75.

Diets for Expectant Mothers.—Sansum says that the diets for expectant and nursing mothers should contain ample bulky or residue-containing foods, ample alkaline foods, ample sugars and starches and less of the fats, ample calories, ample protein, ample mineral foods, ample amounts of the vitamins and ample water. Ten sample menus are given.

Insulin and Dextrose for Vomiting of Pregnancy.—Only two of Lewis' patients had the severe type of hyperemesis gravidarum. There were ten mild cases, but even in these the condition was sufficiently severe not to have been improved by ordinary methods of treatment, such as regulation of diet, habits, hygiene, elimination and the administration of ovarian extract by mouth, or of ovarian extract and corpus luteum hypodermically. Lewis has found dextrose and insulin of marked benefit in all cases of nausea and vomiting of pregnancy. In properly selected patients, 20 cc. of 50 per cent dextrose solution containing five units of insulin may be given intravenously, as an office procedure. This type of treatment is indicated only for patients in whom there is a derangement of carbohydrate metabolism, either from the pregnancy itself or as the result of continuous vomiting.

Iowa State Medical Society Journal, Des Moines

18: 1-40 (Jan.) 1928

Treatment of Tumors of Bladder by Means of Surgical Diathermy. A. G. Fleischman, Des Moines.—p. 1.
Cataract Operations Performed on Patients in Their Own Bed. F. W. Bailey, Cedar Rapids.—p. 8.
Lung Abscess. S. D. Gleeten, Monrovia, Calif.—p. 10.
Surgery of Kidney. V. C. Hunt, Rochester, Minn.—p. 13.
Hemangio-Endotheliosarcoma of Spinal Cord. J. C. Hancock and W. A. Johnston, Dubuque.—p. 18.
Kahn Precipitation Test for Syphilis. A. T. A. Glomset, Des Moines.—p. 24.

Michigan State Medical Society Journal, Grand Rapids

27: 1-84 (Jan.) 1928

"The Doctor's Log." W. J. Stapleton, Jr., Detroit.—p. 1.
Surgical Attack on Head Pain. C. F. McClintic, Detroit.—p. 15.
Dietary Treatment of Pernicious Anemia. J. Huston, Ann Arbor.—p. 17.
Exercise in Treatment of Pulmonary Tuberculosis. W. I. Werner, Northville.—p. 19.
Abortions. J. E. Watson, Detroit.—p. 23.
Medical Teaching in Sweden, Especially Concerning Obstetrics and Gynecology. E. Essen-Moller, Lund, Sweden.—p. 25.
Plexiform Neurofibroma of Median Nerve. W. E. Blodgett, G. A. Brough, Detroit, and J. E. Lehman, Winnipeg, Manit.—p. 28.
Health Talks. G. V. A. Brown, Detroit.—p. 30.
Neurosurgical Clinics of Great Britain, France and Holland. C. F. McClintic, Detroit.—p. 32.
Lord Lister's Influence on Modern Surgery. H. C. Mack, Detroit.—p. 33.

Radiology, St. Paul

10: 1-92 (Jan.) 1928

Influence of Diaphragm on Applicability of Inverse Square Law to Roentgen-Ray Dosage. E. H. Quimby and W. G. Sargent, New York.—p. 1.
Roentgen-Ray Visualization of Bile Ducts: Internal Biliary Fistulas. J. L. Kantor, New York, and A. E. Jaffin, Jersey City, N. J.—p. 10.
Colonic Dynamics. L. J. Carter, Brandon, Manit.—p. 16.
Colonic Malignancy. W. H. McGuffin, Calgary, Alta.—p. 21.
Ulceration of Colon. B. R. Mooney, Edmonton, Alta.—p. 29.
Spasticity of Colon. J. C. McMillan, Winnipeg, Manit.—p. 35.
Colonic Stasis. C. M. Henry, Regina, Sask.—p. 41.
Differential Diagnosis of Abdominal Tumors by Roentgenologic Method. S. Brown, Cincinnati.—p. 48.
Carcinoma of Cervix: Treatment by Combination of Roentgen Rays, Radium and Electrothermic Coagulation. J. T. Stevens, Montclair, N. J.—p. 57.
Chronic Osteitis Simulating Osteogenic Sarcoma: Case. H. K. Taylor, New York.—p. 62.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

8: 413-493 (Dec.) 1927

Cytologic Study of Cultures in Vitro of Jensen's Rat Sarcoma. H. B. Fell and J. A. Andrews.—p. 413.
*Blood Phosphorus in Health and Disease: II. Renal Disease. F. B. Byrom and H. D. Kay.—p. 429.
*Nature of Action of Ultraviolet Rays on Micro-Organisms. T. H. B. Bedford.—p. 437.
*Bilirubinemia in Malignant Tertian Malaria and Blackwater Fever. G. R. Ross.—p. 442.
Antigenic Properties of Four Specimens of Bence-Jones Protein Obtained from Cases of Myelomatosis. S. H. G. Robinson.—p. 454.
*Therapy of Acute Infections. W. Susman.—p. 457.
Local Alterations of Blood Vessels of Tarred White Mice. L. Kreyberg.—p. 465.
Size of Herpes Virus Particles. S. P. Bedson.—p. 470.
*Reactions of, and Absorption by, Lymphatics, Especially of Diaphragm. H. Florey.—p. 479.

Blood Phosphorus Compounds in Kidney Diseases.—The distribution of four types of phosphorus compounds in the blood of thirty-nine patients with renal disease was determined by Byrom and Kay. The increase in inorganic phosphorus (and in lipin phosphorus in subacute nephritis) observed by previous workers was confirmed. In addition to these changes in the inorganic and lipin fractions, definite changes have been shown to occur in the organic acid-soluble ("ester") phosphorus of the red cells. This fraction is altered both in nature and in quantity in advanced nephritis, thus demonstrating a deep-seated change in the chemical composition of the erythrocyte itself.

Action of Ultraviolet Rays on Micro-Organisms.—The results of his experiments regarding the nature of the action of ultraviolet rays on micro-organisms lead Bedford to suggest that photodynamic sensitizers themselves may act through the agency of hydrogen peroxide or some organic peroxide production, and that the typical sensitizer acts (1) by selective adsorption on to the organism concerned, and (2) by peroxide formation when visible light falls on the organism-sensitizer combination.

Bilirubinemia in Malignant Malaria.—Examination made by Ross in thirty cases of malignant tertian malaria and twenty-one cases of blackwater fever by means of the Fouchet and van den Bergh reactions showed that an increased bilirubinemia occurs in both diseases. Bilirubinemia in malignant tertian malaria and initially in blackwater fever is due to intravascular hemolysis, as evidenced by the occurrence of an indirect van den Bergh reaction. In blackwater fever, an obstructive jaundice may be superadded to the initial hemolytic jaundice. This has been observed in patients suffering from suppression of urine. Cases of mild hemoglobinuria in the course of malignant tertian malaria are reported. The degree of bilirubinemia was remarkably uniform in these cases. It is considered that the results justify the assumption that hemoglobinuria is dependent on the rapidity and degree of hemolysis. Below a renal threshold value for hemoglobin, only the reticulo-endothelial system is concerned in the excretion of the excess. Above this value the kidney and the reticulo-endothelial system come into play simultaneously. Renal excretion of hemoglobin is, therefore, independent of the activity of the reticulo-endothelial system.

Treatment of Acute Infections.—In a small series of rabbits the subcutaneous injection of a boiled watery extract of brain tissue was followed by an enhanced effect on the process of agglutinin formation against *B. typhosus*. The administration of the same extract to large series of mice infected with pneumococcus type I has shown a survival of 133, or 51 per cent, of a total of 262 after a similar number of control animals were all dead. The controls received only injections of pneumococci. The survival extended over two or three weeks, and in several experiments to from five to eight weeks, when the experiments were concluded. The enhanced effect of brain extract on the process of immunization may be due to the fact, established experimentally by Susman, that the extract of brain stimulates the pulsations and, probably, the functional activity of the spleen.

Factor Controlling Absorption by Lymphatics of Diaphragm.—Evidence is presented by Florey to show that intra-abdominal pressure is the factor controlling the rapid absorption of fluids and particles via the diaphragmatic lymphatics. A technic is described for viewing the lymphatics of the pleural surface of the diaphragm in a living state.

British Medical Journal, London

1: 1-38 (Jan. 7) 1928

Gallbladder and Its Infections. B. Moynihan.—p. 1.
Preventive Frame of Mind in Midwifery. R. W. Johnstone.—p. 6.
Induction of Premature Labor in Relation to Mental Disease. R. P. Smith.—p. 9.
*Treatment of "Tennis Elbow." G. P. Mills.—p. 12.
Optic Neuritis and Sphenoidal Sinusitis. A. C. R. Walton.—p. 13.
Wire Bristle in Bowel. H. A. Graham.—p. 13.
*Large Ureteral Calculus. J. C. Jefferson.—p. 14.
Foreign Body in Ear for Thirty-Six Years. W. P. Kennedy.—p. 14.

Treatment of Tennis Elbow.—Mills asserts that cases of "tennis elbow" can be cured by simple manipulation, preferably carried out under nitrous oxide anesthesia. The pathologic origin of the lesion is uncertain, but it is suggested that in acute cases a portion of the orbicular ligament may slip between the radial head and the capitellum.

Large Ureteral Calculus.—The stone in Jefferson's case measured 3¼ inches (83 mm.) in length and 1⅝ inches (41 mm.) in diameter, and weighed 1,639 grains (106 Gm.).

Irish Journal of Medical Science, Dublin

6: 605-652 (Oct.) 1927

Significance of Optic Neuritis. N. H. Pike.—p. 611.
*Value of van den Bergh Test in Detecting Latent Jaundice. R. E. Steen.—p. 625.
*Operation for Flail Shoulder with Contractile Deltoid. A. K. Henry.—p. 634.

Value of van den Bergh Test in Detecting Latent Jaundice.—Steen emphasizes that the value of the van den Bergh reaction does not lie in any power it possesses of distinguishing between different types of jaundice. This it will do only partially, and that in the simpler cases. Its greatest value lies in the fact that it can demonstrate hyperbilirubinemia at a time when it cannot be detected by any other means. This condition of "latent jaundice" may be of two different types, depending on the kind of bilirubin causing the increase. The van den Bergh reaction can differentiate one from the other. If the bilirubin is of the type which, having passed through

the liver into the ducts, has been subsequently absorbed owing to obstruction, the "direct" reaction is given; if, on the other hand, the bilirubin is of that type which, normally present in small quantities in the serum, has been formed in the tissues, and is being carried by the blood to the liver for excretion, then the "indirect" reaction only is given. As the performance of the "direct" reaction is as simple as any ordinary clinical test for urine, there is no doubt that it is a test which should be in the hands of every practitioner.

Operation for Flail Shoulder.—Henry restores the function of a contractile deltoid in a flail shoulder by suspending the shaft of the defective humerus to the coracoid process and the acromion with strong fascial strips.

6: 653-700 (Nov.) 1927

*Bladder in Tabes. E. D. McCrea.—p. 658.
Some Otitic Complications of Influenza. P. J. Keogh.—p. 670.
*Chronic Fibrous Epiploitis. R. C. B. Maunsell.—p. 674.
Case of Bilateral Accessory Thyroids. F. J. Morrin.—p. 675.
Case of Hemolysis Following Blood Transfusion in Sprue. W. E. Cooke. —p. 678.

Bladder in Tabes.—McCrea concludes that the vesical symptoms of tabes are of two chief clinical types, the incontinent, in which there is a very definite cutting off of sensation from the higher centers, and the paretic, in which the sensory loss, though present, is not so evident, and is concealed by the interference with the reflex function of the viscus. A third group in which the symptoms are of truly mixed type exists, but is rare. In the paretic bladder, then, the more prominent symptoms are due to interference with the reflex function of the bladder and are largely the result of lesions of the afferent fibers running in the autonomic pelvic nerves. In the incontinent bladder the most obvious symptoms are similar to those of a lesion of the sensory pathway of the cord, and this sensory loss plays an important part in the production of muscle senses which are transmitted by the pudic nerves. McCrea suggests (tentatively) that tabes rarely affects the autonomic or visceral nerves and the somatic sensory nerves simultaneously, and, if it does, never to the same degree. This explanation allows of the differentiation between the pelvic and the pudic nerves. The most obvious cases of tabes are those presenting destruction of somatic sensory fibers, but not visceral crises.

Chronic Fibrous Epiploitis.—Maunsell's patient was suffering from intestinal obstruction. When the peritoneal cavity was opened no intestines were visible; nothing could be seen except a smooth pearl-white membrane with slight prominences where the intestinal swellings had been left during clinical examination. The membrane was continuous above with the peritoneum covering the stomach, was attached to the parietal peritoneum on either side outside the colon, and was attached below along the lines of Poupart's ligaments and in front of the bladder. At no point was there any adhesion to the anterior abdominal wall, the peritoneum covering which appeared normal in color and texture. There was no free fluid. The distribution of the membrane was as if a towel had been laid over the intestines and carefully glued at the bottom and sides to the parietal peritoneum. An opening was made in the midline through the membrane, which was found to be adherent to the intestines, but separable from them by careful dissection and sponging. It soon became evident that there were three strong fibrous bands incorporated in the membrane: one was adherent deep down in the pelvis and constricted the upper part of the rectum; one constricted the lower part of the descending colon, and the third constricted the ascending colon, just beyond the cecum. When these bands were divided, gas could be felt gurgling through the intestines. The membrane was removed in sections as far as the greater curvature of the stomach, over which viscus the peritoneum appeared whiter and felt thicker than normal. The intestines, when freed from the membrane, were found to be universally adherent to one another, but could be separated by sponging. On microscopic examination the fibrous-looking membranes, which were about the thickness of a sheet of morocco leather, were found to be composed on the surface of dense hyaline fibrous tissue, while in the deeper layers the tissue was softer and contained many vessels, similar to those found in a late granulation tissue. There was no covering layer of cells on the surface. Maunsell has named the condition chronic fibrous epiploitis. He failed to find a similar case on record.

Journal of Tropical Medicine and Hygiene, London

31: 1-16 (Jan. 2) 1928

*Anatomic Diagnosis of Yellow Fever. W. H. Hoffmann.—p. 1.

Anatomic Diagnosis of Yellow Fever.—Owing to the simplicity of the histologic diagnosis, and because it is superior to any other method, Hoffmann urges that it should be made obligatory in every fatal case the cause of which is unknown, whenever there is a possibility of yellow fever, and especially in the endemic territory of West Africa, as it is actually the only objective and reliable diagnostic basis for a systematic campaign. An international regulation of the whole problem is indispensable, because a satisfactory result under the prevailing difficulties can be obtained only by the unrestricted cooperation of all the countries interested.

Lancet, London

1: 1-62 (Jan. 7) 1928

Study of Temperament and of Disease in Children. H. C. Cameron.—p. 1.
*Cardiac Infarction and Coronary Thrombosis. J. Parkinson and E. Bedford.—p. 4.
Etiology and Treatment of Acute Poliomyelitis. S. A. K. Wilson.—p. 11.
*Cure of Gastric and Duodenal Ulcers by Intensive Alkaline Treatment. H. MacLean, I. Jones and G. Fildes.—p. 14.
Diagnosis of Limp: Special Reference to Hip-Joint. H. A. T. Fairbank. —p. 19.
Parasitic Fetus. J. Bland-Sutton.—p. 24.
*Effects of Plasmochin and "Plasmochin-Compound" on Gametocytes of Benign Tertian and Subtertian Malaria. P. H. Manson-Bahr.—p. 25.
Sarcoma of Breast Followed Twenty Years Later by Abdominal Carcinoma. A. Fullerton.—p. 26.
Case of Coronary Occlusion Following Parturition. H. W. Jones and C. A. Birch.—p. 27.
*Case of Sarcoma of Cheek Treated by Operation and Injections of Colloidal Lead. J. B. Oldham.—p. 28.

Cardiac Infarction and Coronary Thrombosis.—Parkinson and Bedford present an analysis of eighty-three cases of cardiac infarction, or of mortal coronary thrombosis. Including four cases of multiple thrombosis, the left coronary or a branch was involved in thirty-seven instances and the right in eighteen. The site of election for coronary thrombosis was the left anterior descending branch in the first 3 cm. of its course. In eight cases of syphilitic occlusion both coronary orifices were affected in five instances and the right orifice alone in three, twice with thrombosis. Of the eighty-three patients examined post mortem, including seven with coronary occlusion without infarction, the immediate cause of death was cardiac failure in sixty-two, of whom twenty-four were brought to the hospital dead. In the remaining twenty-one cases, death was partly or entirely due to other causes, such as perforated gastric ulcer, strangulated hernia, surgical operations or malignant disease. Rupture of the heart was present in five cases, and aneurysmal bulging in five. In one case there was hemopericardium without complete rupture. Pericarditis was noted in only eleven cases. Intracardiac thrombosis was noted in fourteen cases; there was evidence of embolism, old or recent, in sixteen cases (three with infective endocarditis), as follows: renal in nine cases, splenic in eight, pulmonary in seven, mesenteric in three, peripheral in two, cerebral in one, and abdominal aorta in one. Reference is also made to 100 cases seen clinically. The symptoms are described and analyzed, and the treatment is outlined.

Intensive Alkaline Treatment of Peptic Ulcer.—The use of intensive alkaline therapy in these cases is advocated by MacLean, Jones and Fildes. Sufficient alkali is given to the patient to keep the gastric acid neutralized during a period sufficiently long to enable the ulcer to heal. They use a powder of the following composition: sodium bicarbonate, 1 part; magnesium carbonate (powdered), 2 parts; bismuth subcarbonate, 2 parts. The dose is a teaspoonful, every two hours, taken in water or milk. For hospital work, the large amounts of bismuth required may be found to be too expensive, and to overcome this the authors use a powder of the following composition: bismuth subcarbonate, 1 part;

sodium bicarbonate, 3 parts; magnesium carbonate (powdered), 3 parts; prepared chalk, 3 parts. When liquid diet combined with alkali is given, the patient quickly loses his symptoms within a day or two, and this is especially true with regard to pain. If, after a few days of treatment, the patient still complains of persistent pain, it is probable that the condition is not an ulcer, or that adhesions to adjacent organs are present. Therefore, this method of treatment is of great value as a means of diagnosis. The exact details of treatment are not important, but a few simple principles must be kept in mind. The most important point is to give sufficient alkali and to see that alkali is available during the night if required. In order to overcome, as far as possible, the possibility of the stomach becoming acid during the night, the patient receives a double dose of the powder immediately before retiring. One or two doses are also left near his bed, and he is warned that if he should wake up with any discomfort he is to take a dose. It generally happens that if acid is formed during the night there is not much need for more alkali, so that by warning the patient as to the necessity for taking the powder whenever he wakes up, the difficulty of preventing acid accumulation during the night may be overcome. Though it is best for the patient to be in bed during the earlier period of the treatment, this is not always necessary, and whether or not complete rest is insisted on must depend on the circumstances. After a few weeks of intensive alkaline treatment, the amount of powder given is reduced until it is gradually left off. Its use should, however, be continued for several months, especially in the case of duodenal ulcers.

Effect of Plasmochin on Malaria.—Manson-Bahr says that plasmochin with quinine exerts a selective action on the gametocytes of subtertian and benign tertian malaria. Even in small therapeutic doses, its action on the parasite is much more rapid and striking than that of quinine uncombined with plasmochin. The drug has the additional advantage of being tasteless, and is extremely well tolerated. The clinical results so far observed have been very satisfactory. The effect of any drug on the crescent, which is admittedly the most resistant form of the human malaria parasite, can be taken as an index of its efficacy. In this respect it has been shown that plasmochin in combination with small doses of quinine appears to have a much stronger parasitotropic action than either drug administered singly.

Sarcoma with Gland Metastases.—Oldham's case was one of undoubted sarcoma which had already invaded the glands. The patient was alive and well eighteen months after operation. The case is an example of glandular metastasis in sarcoma.

Paris Médical

63: 437-472 (Dec. 3) 1927

Therapeutics in 1927. P. Harvier.—p. 437.
*Treatment of Hodgkin's Disease. L. Lortat-Jacob and P. Schmite.—p. 452.
Chemotherapy of Septicemias. E. Vaucher and Uhrig.—p. 454.
*Drainage of Gallbladder by Duodenal Intubation in Migraine. Pasteur Vallery-Radot and P. Blamoutier.—p. 465.
*Radiotherapy in Cerebral Tumors. H. Baruk.—p. 469.

Treatment of Hodgkin's Disease.—Lortat-Jacob and Schmite treated a patient with Hodgkin's disease by injections of serum taken from another patient with Hodgkin's disease, who had been treated by radiotherapy. They injected 9.5 cc. in ten days in a first series and 11 cc. in ten days in a second series. The erythrocytes increased in number from 2,800,000 to 4,300,000, while the leukocytes fell from 22,800 to 7,800, the improvement beginning after the first injection. After the injections, radiotherapy was instituted, and after twenty-four treatments, the patient left the hospital apparently cured. All functional disturbances had ceased; there was an increase of 12 Kg. in weight, the glandular masses had disappeared and the blood formula was normal. The authors also discuss the use of thorium X, benzol and arsenic in Hodgkin's disease.

Drainage of Gallbladder by Duodenal Intubation in Migraine.—Seven of twenty-two cases of migraine treated by Pasteur Vallery-Radot and Blamoutier by duodenal intubation were cured. In these cases the vomitus was bilious and of a dark color. The gallbladder was sensitive in most of the patients, except for a time after intubation.

Indications for and Results of Radiotherapy in Cerebral Tumors.—The cerebral tumors which are especially susceptible to the action of roentgen rays are gliomas and tumors of the pituitary. Preliminary decompression to avoid intracranial hypertension is not absolutely indispensable when the tumor is extremely radiosensitive and there are no marked symptoms of hypertension, if the treatments are carefully measured.

63: 473-488 (Dec. 10) 1927

Interpretation of Orthoradioscopic Images of Heart. C. Lian and G. Guénaux.—p. 473.
*Early Clinical Diagnosis of Typhus by Dry Cupping. B. Melconian.—p. 485.

Early Clinical Diagnosis of Typhus by Dry Cupping.—By the application of dry cupping glasses the exanthem of typhus may be made to appear before the fifth day, when it usually appears, and the disease is thus differentiated from recurrent fever, typhoid and pneumonia. A more or less dark eruption bespeaks a severe attack.

Presse Médicale, Paris

35: 1505-1520 (Dec. 10) 1927

*Blood Transfusion in Obstetrics. Lévy-Solal and A. T. Tzanck.—p. 1505.
Pluriglandular Heteroplastic Graft in Treatment of Endocrinopathies. N. Pende.—p. 1507.
Muscular Activity and Circulatory Reactions. L. Binet.—p. 1507.
Chronic Icterus from Obstruction of Choledochus by Stone. L. Ramond.—p. 1515.
Marrubium in Extrasystolic Arrhythmia. H. Leclerc.—p. 1516.

Blood Transfusion in Obstetrics.—By means of blood transfusion Lévy-Solal and Tzanck treated twenty-six cases, including six cases of postpartum hemorrhages, seven of hemorrhage following abortion, three of shock occurring about an hour after hemorrhage, three of placenta praevia, two of severe anemia of pregnancy, and five of extra-uterine pregnancy. It is often necessary to replace the blood, amount for amount. The authors do not use sodium citrate because large doses would be toxic. The apparatus employed by them permits transfusion of pure blood in practically unlimited quantities as slowly as is desired. The donor may be changed during the operation. The technic is described and the apparatus illustrated.

35: 1553-1568 (Dec. 21) 1927

*Prophylaxis of Hereditary Syphilis. G. Dujol and C. Laurent.—p. 1553.
Appendicular Colic, Coproliths and Gangrenous Appendicitis. G. Métivet.—p. 1554.
Whipple's Method in Treatment of Severe Anemias. J. Mouzon.—p. 1554.

Prophylaxis of Congenital Syphilis.—If clinical facts and serologic reaction indicate syphilis, treatment should be begun at the beginning of pregnancy. The most efficacious and best tolerated treatment consists in intravenous injections of arsenical salts. Dujol and Laurent treated 213 women whose previous pregnancies had resulted in about 26 per cent of children living three months, about 25 per cent born dead or dying before three months, 34 per cent of miscarriages and 15 per cent of macerated fetuses. After energetic treatment with neoarsphenamine, these women, from 161 pregnancies, had about 92 per cent of children living at three months, about 5 per cent of stillbirths, 0.4 per cent of macerated fetuses and 2.5 per cent of miscarriages. In the treatment of the infants, the authors use subcutaneous injections of a pentavalent arsenic preparation; of twenty-two children treated, twenty developed normally.

Revue de Médecine, Paris

44: 423-556, 1927

*Abnormal Forms of Pancreatic Cancer. L. Bouchut and P. P. Ravault.—p. 423.
Amyotrophic Paralyses Following Serotherapy. H. Verger, E. Aubertin, and P. Delmas-Marsalet.—p. 451.

Abnormal Forms of Pancreatic Cancer.—Bouchut and Ravault present fifteen cases of pancreatic cancer, some simulating gastric cancer, some icteric forms with abnormal onset, some with a painful ectopic syndrome, some febrile forms and some metastatic forms. In one case, the clinical diagnosis was cancer of the body of the pancreas and necropsy revealed cancer of the pancreas without involvement of the biliary tracts.

Archivio Italiano di Chirurgia, Bologna

20: 1-163 (Nov.) 1927

*Intestinal Contents in Obstruction. P. L. Badile.—p. 1.
Arteriovenous Aneurysm. F. Fedeli.—p. 98.
Strawberry Gallbladder. N. Piccaluga.—p. 125.

Intestinal Contents in Experimental Obstruction.—Experiments in dogs prove the resemblance of the phenomena developing after closed intestinal exclusion and spontaneous acute intestinal obstruction. In these animals death is caused by the toxic microbic flora of the contents and not by the toxicity of the mucous secretion. The normal anaerobic saprophytes of the intestine suddenly acquire virulence as their open environment becomes closed.

Chirurgia degli Organi di Movimento, Bologna

11: 539-625 (Nov.) 1927

*Dislocation of Hip Joint. V. Putti and R. Zanoli.—p. 539.
Malleolar Fractures. B. Schiassi.—p. 575.
Tumors of Cervical Spine. M. Camurati.—p. 581.
Case of Dislocation of Hip Joint. A. Catterina.—p. 595.
Osteotomy of Malleolus. G. Pieri.—p. 616.

Treatment of Dislocation Caused by Infantile Acute Osteo-Arthritis in Hip Joint.—In cases of osteomyelitic dislocation of the hip joint in childhood, nonsurgical treatment invariably fails, either totally or partially. Of course, surgical steps must be deferred until the causative inflammatory process has cleared up. In the fifteen cases reported, the immediate result was uniformly excellent. In one case the reduction is perfect after eight and a half years, in five cases, after from one year to one and a half years, in others, conditions are promising but sufficient time has not elapsed for passing judgment. In their last seven cases, Putti and Zanoli used plastic reconstruction of the femoral neck, which they consider the operation of choice.

Clinica Ostetrica, Rome

29: 653-704 (Dec.) 1927

*Preoperative Radium Treatment in Uterine Cancer. F. Patti.—p. 653.
Cesarean Section at Term. L. Bini.—p. 675.
New Forceps. N. Dallera.—p. 681.

Preoperative Radium in Uterine Cancer.—At the Catania Institute seventy cases of cancer of the uterus have been treated with radium, with or without previous exposure to roentgen rays. In two cases, reported in full, clinical observation and microscopic examination of the lesions show that radium therapy may be followed by a complete clinical and anatomic cure. Radium brings about both the disappearance of the carcinomatous cells and the sterilization of the field. In threshold cases, preoperative radium therapy paves the way for total hysterectomy. In pelvic metastases, radium alone, followed by the knife, can secure results. Sterilization by radium prevents infection and obviates the need of Mikulicz's drainage.

Clinica Pediatrica, Modena

9: 787-854 (Nov.) 1927

Infant Mortality at Cagliari. F. Pinna.—p. 787.
Insulin in Infant Malnutrition. G. Roi.—p. 823.
*Insulin in Rickets. G. Roi.—p. 839.

Use of Insulin in Treatment of Rickets.—Of a group of children with rickets, six were treated with insulin alone, five with insulin and calcium lactate and nine with phosphorized oil. The best and quickest results were in the group treated with insulin and calcium. Insulin by itself had little effect.

Gazzetta degli Ospedali e delle Cliniche, Milan

48: 1177-1200 (Dec. 11) 1927

*Diagnostic Sign in Latent Pulmonary Tuberculosis. R. Gaeta.—p. 1179.

Diagnostic Sign in Latent Pulmonary Tuberculosis.—In patients with latent pulmonary tuberculosis, complaining of "weakness," "loss of weight" and "anemia," the sweat, especially in the axillae, has a marked formic acid odor. The rôle of the skin in immunologic processes and its relation to internal secretions may explain this change in the secretion of the sweat glands. Meyer noticed an increase of oxalic acid in the urine of tuberculous subjects. As formic acid may be formed by the action of oxalic acid on glycerin, it might derive from the fat capsule of the tubercle bacillus.

Rassegna Internazionale di Clinica e Terapia, Naples

8: 745-816 (Nov.) 1927

*Malta Fever. G. Izar.—p. 750.
Diagnosis of Hyperthyroidism. G. Marañon.—p. 762.
Postoperative Jejunal Obstruction. V. Pauchet.—p. 766.
Traumatic Hyperplastic Cellulodermatitis. G. G. Perrando.—p. 770.

Acriflavine in the Treatment of Malta Fever.—In patients with Malta fever, the intravenous injection of acriflavine (0.01 Gm. per kilogram of body weight) acted favorably on the course. Two or three injections are usually necessary. The effect on the fever was almost immediate. The spleen and liver enlargement continued longer. In addition to the bactericidal power of the drug, there may be some vaccinating action by the killed germs, as shown by the increased agglutinating power in the blood of treated patients. In one case good results followed the use of small (0.20-0.30 Gm.) enemas.

Rivista di Clinica Pediatrica, Florence

25: 769-856 (Nov.) 1927

*Skin Test in Tuberculous Meningitis. G. Gelmi.—p. 769.
Bilateral Deafness Following Poliomyelitis. G. Busacca and I. Tomassini.—p. 780.
Diphtheria Vaccination with Anatoxin. G. Sorge.—p. 791.
Indoxyl in Urine of Children. G. Halfer.—p. 801.
Pellagra in Children. B. Trambusti.—p. 809.

Skin Test in Tuberculous Meningitis.—In 123 out of 216 cases of tuberculous meningitis and miliary tuberculosis, Gelmi carried out the tuberculin skin test. In 78.2 per cent it proved positive. These figures are much higher than those usually accepted. The cause may have been the patients', good general condition when taken ill, the comparatively early stage of the disease and the changed skin sensitiveness. In four cases, the course of the disease was followed until death. The skin reaction became negative in three of these two days before death. On the other hand, the intradermal reaction remained positive in two of the three cases.

Progresos de la Clínica, Madrid

35: 797-872 (Nov.) 1927

*Prognosis in Pneumonia. M. Bañuelos García and J. M. Villacín Rebollo.—p. 797.
Complications of Diabetes. E. Carrasco Cadenas.—p. 802.
Insulin in Malnutrition. E. Carrasco Cadenas.—p. 805.
Anatoxin in Diphtheria. F. Moreno de Vega y Soler.—p. 807.
*Ossification and Growth. F. E. Ortega.—p. 836.

Bacterial Flora in Prognosis of Pneumonia.—A study of twenty cases of pneumonia bears out the prognostic significance of the microbic association in the sputum. If large numbers of streptococci and staphylococci are associated with pneumococci, the prognosis is most serious. This factor exceeds in importance even the soil and the apical location of the process.

Parathyroid Extract as a Factor in Ossification and Growth.—Experiments on dogs and clinical tests in three little girls demonstrated that the parathyroid hormone is apparently an important agent in bone and body growth. This is the treatment of choice in any case of retarded growth in which thyroid medication has brought the basal metabolism to normal but has left the growth disturbance uncorrected. Doses of parathyroid extract should be very small and should be associated with oral administration of calcium lactate.

Revista Médica Latino-Americana, Buenos Aires

13: 1-226 (Oct.) 1927

Right Ventricular Asystole. R. A. Bullrich.—p. 31.
Volkmann's Disease. C. Lugones.—p. 39.
*Ascaris Eggs. R. Lorenzo, E. E. Charles and E. Astarloa.—p. 73.
Reticulo-Endothelial System. M. E. Varela.—p. 98.

Development of Ascaris Eggs.—The outer albuminous membrane is not essential for the complete development of ascaris eggs. In one case eggs lacking that protection were kept in a fecal medium, and fifteen days afterward the membrane made its appearance. Its absence is not, then, a sign of the eggs' sterility.

Deutsches Archiv für klinische Medizin, Leipzig

157: 129-256 (Oct.) 1927

*Lactic Acid Content of Blood in Disease of Liver. A. Adler and H. Lange.—p. 129.
Homogentisic Acid in Serum in Alkaptonuria. G. Katsch and E. Metz. —p. 143.
Conduction by Normal and Diseased Lung of Rhythmic Sounds of Mouth Organ. A. Winkler.—p. 158.
Metabolism During Incubation Period of Febrile and Nonfebrile Infections. F. Strieck and H. E. C. Wilson-Glasgow.—p. 173.
Total Blood Mass: Normally and in Disease. S. Rusznyák.—p. 186.
Changes in Blood Serum Content on Basis of Determinations of Dry Substances Normally and in Diseases of the Liver and Pituitary. J. Kiss.—p. 202.
Insulin and the Stomach. E. Wiechmann and W. Gatzweiler.—p. 208.
Hypoglycemic Reaction to Function Test with Glucose. T. Stenström. —p. 216.
*Iodine and Goiter. W. H. Jansen and F. Robert.—p. 224.

Lactic Acid Content of Blood in Disease of the Liver.—Adler and Lange found the determination of the lactic acid content of blood in hepatic diseases of diagnostic and prognostic value. In cases of jaundice, an increase above 30 mg. is of serious prognostic significance. In the differential diagnosis of obstructive jaundice, an increase in blood lactic acid is indicative of injury to the liver cells. In the presence of carcinoma, such an increase indicates that metastases have formed. In cholelithiasis and in carcinoma with icterus but without metastases the lactic acid values are normal. Catarrhal icterus, with normal values, has a favorable prognosis. In heart disease accompanied by marked hepatic stasis and cyanosis, the lactic acid of the blood is increased in amount.

Iodine and Goiter.—Jansen and Robert conclude that iodine plays a considerable rôle in the formation of the thyroid hormone and in its physiologic action. This effect is qualitative rather than quantitative. It is suggested that other substances, not related to iodine, also play a part in thyroid functioning.

Deutsche Zeitschrift für Chirurgie, Leipzig

207: 1-304 (Dec.) 1927

Homeotransplantation and Heterotransplantation of Organs with Special Attention to Vital Staining. W. Hoffmeister.—p. 1.
Fat in Blood in Fractures. K. Flick and E. Traum.—p. 16.
Treatment of Surgical Tuberculosis. A. Oberniedermayr.—p. 22.
Fate of Iodipin Injected into Joints. Kobes and Militzer.—p. 42.
Diathermy, Bloodless Operations and Control of Bleeding. K. Hutter. —p. 51.
Electrolysis in Burns. E. Schneider.—p. 55.
Diagnosis of Lymphadenitis by Inspection and Palpation. W. Schmidt. —p. 65.
Traumatic Central Brain Hemorrhage. F. Reuter.—p. 92.
Postoperative Tetany. M. Grasmann.—p. 102.
*Preoperative and Postoperative Iodine Treatment of Exophthalmic Goiter. F. Schürer-Waldheim and F. Windholz.—p. 111.
Plastic Operations After Removal of Breast. R. Kraft.—p. 171.
Latent Injury to Liver in Surgery. H. Achelis.—p. 184.
*Pathology and Symptoms of Duodenal Ulcer. H. Puhl.—p. 202.
Effect of Penetrating Gastro-Duodenal Ulcer on Internal Secretion of Pancreas. H. Stocker.—p. 249.
*Fibrous Carcinoma of Stomach. F. Plettner.—p. 265.
Isolated Polyposis of Duodenum and Upper Segment of Small Intestine. R. Gehrig.—p. 286.
Transdiaphragmatic, Simultaneous Injury of Abdominal and Thoracic Organs. N. Wryonis.—p. 295.

Preoperative and Postoperative Iodine Treatment of Exophthalmic Goiter.—On the basis of eighteen observed cases the authors conclude that an artificial remission can be produced through administration of iodine before and after operation. This is manifested by disappearance of the nervous symptoms, such as palpitations, restlessness, sweats, tremor and diarrhea. Simultaneously there is a lowering of basal metabolism at a rate of 3 per cent per day. The operation is well tolerated after six or seven days of medication with compound solution of iodine. Histologic studies demonstrate the effect of iodine on the morphologic structure of the gland. Instead of proliferating hyperplastic forms, quiescent parenchymatous or colloid goiters are encountered. Atrophy and degenerative changes in the epithelium were observed more rarely. Lymphocytic infiltrations were noted. A direct relationship between the degree of the morphologic changes and the clinical picture was not observed.

Pathology and Symptoms of Duodenal Ulcer.—The similarity between the duodenal and the gastric ulcer is pointed out by Puhl and the conclusion is drawn that the two represent the same disease with different localizations. In 100 gastric resections, Puhl has found forty-nine duodenal and fifty-one gastric ulcers, in only two were both present. From his own material and from that of other workers, it appears that in the male duodenal ulcer is slightly more frequent than gastric. Both types of ulcer are less frequent in the female than in the male. The symptoms, likewise, are milder in the female and the lesions show a greater tendency to spontaneous healing. The ratio of gastric to duodenal ulcer in the female is 2:1. In roentgenologic studies, the niche demonstrated by Åkerlund is frequently seen, in spite of the fact that duodenal ulcers are usually small. In the absence of the niche, deformity of the duodenal bulb is the most characteristic sign. At operation, duodenal ulcers of the anterior wall are recognized by hyperemia of the serosa or by a radiating scar. When several such scars are present, a diverticulum-like deformity may be present. When the existence of an ulcer cannot be clearly demonstrated at operation, it is wise to desist from further intervention. Such a patient should be submitted to intensive medical treatment. Even the demonstration of a niche is not necessarily an indication for an operation. Operation is indicated in cases of large callous ulcers with markedly deformed bulb and with penetration into a neighboring organ. But even these do occasionally heal under medical treatment.

Fibrous Carcinoma of the Stomach.—Plettner presents a clinical and histologic study of five cases of so-called linitis plastica of the stomach. There is nothing characteristic or even suggestive in the history of the patient. The symptoms were: fullness in the epigastrium, pain, discomfort, etc. There were periods of amelioration and marked gain in weight. The cases were of long duration, one of at least ten years. Macroscopically, the stomachs exhibited partial or complete involvement with a marked thickening of the wall and shrinkage in size. Microscopically, there was found an extensive sclerosing fibrosis, involving particularly the submucosa, but also the interstitial connective tissue of the muscular layers, with round cell infiltration, eosinophils and plasma cells. Frequently no trace of carcinoma was at first evident and only a careful search revealed nests or cords of carcinomatous tissue. Krompecher has differentiated a type which involves the pyloric portion only. He considers this benign and refers to it as benign hypertrophy of the pylorus. Linitis plastica involving all of the stomach is designated by him "carcinoma disseminatum." Konjetzny, on the other hand, is of the opinion that the genesis of the two is the same. He interprets the marked fibrosis as an attempt at healing. The excessive connective tissue chokes and destroys the cancer cells and thus, at least temporarily, arrests their growth. He considers it possible that the benign pyloric hypertrophy of Krompecher is a healed fibrous carcinoma. As a result of his own studies the author is inclined to accept Konjetzny's view that both are cases of "carcinoma fibrosum."

Frankfurter Zeitschrift für Pathologie, Munich

35: 375-574, 1927

Comparative Study of Morphology of Tuberculosis in Man and Experimental Animals. W. Pagel.—p. 375.
Struma Nodosa. P. Heilmann.—p. 401.
*Ball Thrombi of Heart. A. W. Goljajew.—p. 409.
Primary Malignant New Growth of Hepatic Duct. N. I. Wylegschanin. —p. 417.
*Small Carcinomas of Small Intestine. F. Windholz.—p. 422.
*Malignant Endocarditis Caused by Bacillus Pyocyaneus. W. Büngeler. —p. 428.
Carcinoma of Esophagus with Giant Cells and Localized Areas of Necrosis of Fatty Tissue in Capsule of Mesenteric Lymph Nodes. O. Teutschlaender.—p. 436.
Intramural Lymph-Cyst of Uterus with Sarcoma in Its Wall. E. Wolff.—p. 441.
Hypertrophic Cavernous Lymphangioma of Pancreas. M. N. Sajewloschin.—p. 452.
Papillary Nephritis. A. Kovács.—p. 457.
*Primary Sarcoma of Spleen. F. Eickenbusch.—p. 464.
*Mortality of Atherosclerosis. M. Hesse.—p. 477.
Suprarenal Hemorrhages. K. Kamniker.—p. 487.
Pathology of Pituitary. W. Berblinger.—p. 497.

Pathogenesis of Gastric Ulcer: Value of Gastroscopy. W. Sternberg. —p. 525.
Diffuse Hemangio-Endothelioma of Liver. K. Neubürger and L. Singer. —p. 543.
*Are Lymph Nodes Primary Blood Filters? E. A. H. Friedheim.—p. 549.

Ball Thrombus of Heart.—Goljajew relates the case of a woman, aged 48, who presented herself with general anasarca which had been present for three weeks. Twenty-one years and seventeen years previously she had had a similar condition, but it disappeared. The extremities were very cyanotic. The area of heart dulness was increased considerably; to the right, it extended as far as the right nipple. Heart sounds were faint. The diagnosis was chronic myocarditis. The patient died two days after admission. At necropsy, the left ventricle was found to contain a free thrombus, 4.5 cm. long and 3.2 cm. broad. The left auricle was almost filled by a thrombus that was firmly connected with the walls of the auricle. This is said to be the twenty-fourth case of the kind on record.

Small Carcinomas of Small Intestine.—Windholz says that his case gives further proof of the derivation or origin of these tumors from the argentaffine cells of the intestinal mucosa. There were twenty-six tumors varying in size from 1 to 12 mm. Most of them were situated in the jejunum at the mesenteric margin.

Malignant Endocarditis Caused by Bacillus Pyocyaneus.—Büngeler relates the case of a man, aged 65, who had had erysipelas with endocarditis as a sequel. Later, a mitral insufficiency developed. Finally, because of a nervous disorder, pyretotherapy was employed, a mixture of bacilli (components not stated) being injected to induce fever. In a few days symptoms of malignant endocarditis were manifested. Death resulted on the sixteenth day. Bacteriologic examination of sections of the spleen disclosed *B. proteus, B. pyocyaneus* and gram-positive cocci.

Primary Sarcoma of Spleen.—A case of primary round cell sarcoma of the spleen with metastases in the pleura, a hemorrhagic pleural effusion and ascites is reported by Eickenbusch. Few symptoms had been manifested before the splenic enlargement was noted.

Mortality of Arteriosclerosis.—Hesse analyzes 9,149 necropsies done during an eight-year period—between 1905 and 1912—with reference to the mortaltiy of arteriosclerosis. There were 402 deaths from arteriosclerosis, the greatest number in any one year being seventy-seven; the lowest, thirty-seven. In the same period, there were 1,656 deaths from tuberculosis and 1,125 deaths from cancer. Generalized arteriosclerosis and arteriosclerosis of the brain occurred most often, ninety-six and ninety-eight times, respectively, in a group of 256 cases analyzed with reference to localization. The renal vessels were involved thirty-nine times; the heart, twenty-three times.

Lymph Nodes as Blood Filters.—Friedheim asserts that lymph nodes and organs are secondary blood filters. The liver, spleen and bone marrow are primary filters. The subcutaneous connective tissue may, in certain states of irritation, become a primary filter.

Münchener medizinische Wochenschrift, Munich

74: 2045-2084 (Dec. 2) 1927

*Female Sex Hormone. E. Laqueur.—p. 2045.
Observations in Competitive Athletics. J. Kaup, P. Gotthardt, E. Hoferer and F. Plate.—p. 2050.
*Malaria Treatment of Tabes. G. Wüllenweber.—p. 2056.
Prevention of Tetanus. S. Heilbronn.—p. 2058.
*Seasickness. L. Fischer.—p. 2058.
What is Nerve Massage? A. Müller.—p. 2059.
Infant Feeding. L. Langstein.—p. 2059. C'cn.
Physician's Thoughts on Medicine: Eternal Verities. A. Bier.—p. 2062. C'cn.
Rules for Surgical Assistants. E. Sachs.—p. 2065.

Properties of Female Sex Hormone.—On large numbers of laboratory animals Laqueur tested the action of the female sex hormone on estrus, growth, the breast, metabolism, also its antimasculine action. In at least 50 per cent of many thousand experiments, which included immature, senile and castrated animals, injection of an aqueous solution of this hormone, containing a minimal amount of dry substance, produced ovulation. Growth of the genital organs, with the exception of the ovary, was demonstrated in dogs and in rodents. The dose adequate to cause growth was only one tenth of that necessary to induce estrus. In the breast, the enlargement affected only the secreting portions. In the respiratory metabolism, the effect of the hormone was seen in a regular increase in the oxygen intake and decrease in the carbon dioxide output. Three weeks' treatment resulted in retrogressive metamorphosis of testes, penis, prostate and seminal vesicles. On discontinuance of the treatment, the organs regained their normal condition. The question whether the primary effect was confined to the testes, the changes in the other organs being secondary, was not answered. The hormone exerted no toxic effects; even in large doses, it was without influence on heart or respiration. This female sex hormone is soluble in water; it is dialyzable through collodion and parchment. Its physical qualities are further discussed.

Malaria Treatment of Tabes.—Thirty unselected cases of tabes were treated with malaria by Wüllenweber. Clinical improvement was obtained in 87 per cent; improvement in the reactions of the cerebrospinal fluid, in 82 per cent. There were two deaths with symptoms of vasomotor collapse. In consideration of the relatively good prognosis as to life for tabetic patients as compared with general paralytics, malaria treatment is justified in the first named, he believes, only in strong persons, without pronounced aortitis, obesity or hypertonia. The two fatal cases in this series were complicated by aortitis. The gastric crises and lancinating pains in the lower extremities, which form the chief indications for malaria therapy, may be temporarily exacerbated by the fever to such an extent that the treatment can be continued only under an opiate.

Treatment of Seasickness.—Fischer thinks that the direction of the motion of the lymph in the vestibular apparatus is the decisive factor in seasickness; horizontal motion is well borne, while vertical motion causes typical discomfort. The best results seemed to be obtained with the patient prone and the head turned to one side so that the ship's motion was chiefly transferred to the lymph in the horizontal and the posterior vertical semicircular canals. The motion of the ship and the direction of the berth in relation to the ship have to be considered in selecting the suitable positions.

Zentralblatt für Gynäkologie, Leipzig

51: 3097-3160 (Dec. 3) 1927

*Hematinemia, Especially in Extra-Uterine Pregnancy. G. Haselhorst.—p. 3098.
History of Obstetric Lever. F. C. Wille.—p. 3105.
Surgical Treatment of So-Called Posterior Parametritis. N. Louros.—p. 3109.
*Famine and Uterine Prolapse. M. Magid.—p. 3111.
Treatment of Carcinoma of Uterus with Acetone and Radium. G. Gellhorn.—p. 3114.
Deviation of Uterus and Prevention of Perineal Laceration. D. von Ott. —p. 3117.
Birth of Full-Term Child Through Central Perineal Tear. M. Karlin. —p. 3120.

Hematinemia in Extra-Uterine Pregnancy.—From observations in fifty-three cases of abdominal pregnancy, Haselhorst concludes that hematin is spectroscopically demonstrable in the circulating blood in a little less than one third of all disturbed extra-uterine pregnancies and in about one half of all tubal abortions of protracted course.

Famine and Uterine Prolapse.—Writing from Kief, Magid reports that the percentage of uterine prolapse among the refugees from the famine-stricken provinces in 1921-1922 was more than four times as great as that among the native inhabitants from 1919-1926. He regards lack of food as a contributing cause.

Nederlandsch Tijdschrift. v. Geneeskunde, Amsterdam

71: 2025-2128 (Nov. 12) 1927. Partial Index

*Inherited Degeneration of the Macula Lutea Associated with Color Blindness. K. T. A. Halbertsma.—p. 2056.
Induced Psychoses. H. J. Schim van der Loeff and J. A. J. Barnhoorn. —p. 2069.
Case of Parkinsonism After Typhoid. C. G. Nagtegaal.—p. 2079.

Inherited Degeneration of the Macula Lutea Associated with Color Blindness.—Halbertsma presents a family tree, in which the male founder was afflicted with color blindness and degeneration of the retina. Of nine children, one was

similarly affected and two had color blindness alone. In the third generation, consisting of fourteen persons, two had color blindness and retinal degeneration, two color blindness alone. Of the thirty-one descendants in the fourth generation, three presented color blindness and retinal degeneration, two color blindness alone. Only males were affected. The retinal degeneration was symmetrical, was mainly limited to the macular region, and appeared in early life.

71: 2129-2224 (Nov. 19) 1927. Partial Index

*Radiotherapy of Uterine Cancer and Infection. D. den Hoed.—p. 2132.
Histopathologic and Histochemical Examinations in a Case of Juvenile Amaurotic Dementia. A. Querido.—p. 2140.
*Psychic Infection and External Influence in Neuroses and Neuropsychoses. H. Breukink.—p. 2151.
Agranulocytosis. W. C. Haverkamp.—p. 2158.
Bilateral Cysts of Nostril. P. Plantenga.—p. 2159.

Radiotherapy of Uterine Cancer and Infection.—Two deaths, from sepsis and peritonitis, respectively, following radium treatment of inoperable carcinomas of the uterus called den Hoed's attention to the influence of irradiation in spreading the secondary infection usual in uterine carcinoma or in lighting up an old pelvic infection. The traumatization of the tissues incident to insertion of the radium, especially within the cervix, the traumatization from the rays themselves and the local and general lowering of resistance are all possible factors in a spread of the local infection. Before irradiation, he now carries out Philipp's virulence test, to determine the bactericidal power of the patient's blood in relation to the flora actually present in the vagina. Patients with hemolytic streptococci in the vagina and without a corresponding bactericide in the blood are not treated with radium until the bactericidal power of the blood is reestablished; treatment with roentgen rays is similarly delayed or is begun very cautiously. The same method is followed with patients with large numbers of hemolytic streptococci and with bacterical power in the blood. This system has been followed in nineteen cases and serious complications following radiotherapy have been absent.

Psychic Infection and External Influences in Neuroses and Neuropsychoses.—The cause of neurosis, Breukink states, lies in being "a good listener," i. e. in depending on what other people say. Therefore, the best therapy is: no medicine, no advice and no prescribed regimen. The cardinal point in all neuroses is a feeling of inferiority. So long as a patient with uncomplicated neurosis does anything or omits doing anything on account of any symptom, he remains bound to his illness. Self-dependence is the one aim to be sought. Breukink blames external influences. The sufferer from a neurosis does not, he affirms, seek escape in his illness, as Freud says; he is pushed into it by external causes.

71: 2225-2320 (Nov. 26) 1927. Partial Index

*Glycosuria, Diabetes Mellitus and Pregnancy. H. P. A. Smit.—p. 2226.
Digitalis and Digitalis Preparations. J. S. Meulenhoff.—p. 2232.
Disease of Peripheral Portion of Ninth, Tenth, Eleventh and Twelfth Left Cranial Nerves After Injury from Blunt Trauma. D. Brocx.—p. 2240.

Glycosuria, Diabetes Mellitus and Pregnancy.—The glycosuria which is a temporary phenomenon in about 10 per cent of pregnant women must not be confused with diabetes. Smit reports a case of grave diabetes in which the patient passed safely through a first pregnancy and was delivered spontaneously one month before term. The puerperium was undisturbed. Nearly two years later, at the time of writing, the patient was in the sixth month of a second pregnancy, and was standing it well. During this pregnancy, in contrast to the first, she has been under continuous observation and treatment with insulin.

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70: 1081-1104 (Nov. 17) 1927

Ellermann's Method for Staining Granules. S. Petri.—p. 1090.
*Acute Diseases of Pancreas. O. Mikkelsen.—p. 1095. C'td.

70: 1105-1130 (Nov. 24) 1927

*Acute Diseases of Pancreas. O. Mikkelsen.—p. 1105. C'tn.

70: 1131-1154 (Dec. 1) 1927

*Acute Diseases of Pancreas. O. Mikkelsen.—p. 1131. C'cn.
Results of Herniotomy in Inguinal Hernias in Men. J. P. Jensen.—p. 1145.

Acute Diseases of the Pancreas.—Mikkelsen reviews seventy-three cases of acute and subacute recurring disease of the pancreas. He asserts that urinary diastase of 150 or more always points to the presence of pancreatic disease. In the last two years determination of the diastase in the urine (Fabricius-Møller) was made in all cases. A positive diastase reaction is considered an excellent diagnostic supplement to the clinical symptoms in all cases and of particular value in difficult diagnosis in the milder acute or subacute cases. He believes tenderness in the epigastric region, in the midian line or slightly to the left, is a highly important symptom, almost always present in acute disorders of the pancreas. Rise in temperature does not preclude acute pancreatic disease. He maintains that an acute disease of the pancreas does not of itself indicate operation. Operative treatment is indicated in case of complication (abscess or peritonitis) or of diagnosed underlying cholelithiasis, but not until the pain has subsided. Cases from his material are reported in support of his standpoint.

CORRECTIONS

Liver Extract in Toxemias of Pregnancy.—In the *Atlantic Medical Journal*, December, 1927, page 141, is published an article by Harold A. Miller and D. B. Martinez, entitled "Liver Extract in the Toxemias of Pregnancy." The paper was abstracted in The Journal, February 4, page 417, but apparently the abstract was misleading and confusing. It was headed the same as the original article but in the body of the abstract liver diet is mentioned. Therefore, the following abstract is submitted as a substitute:

"An increasing suspicion that the liver necrosis found at autopsy had more than a passing significance, a feeling that the detoxicating function of the liver was essential to pregnant women, and a hope that this neutralizing substance, whatever it may be, could be supplied, led the authors to try the use of liver extract (heparmone) in the treatment of eclamptic and preeclamptic women. Their series now consists of 107 preeclamptic cases divided roughly into mild, moderate and severe, with fifteen cases of eclampsia (no eclamptic patient had heparmone prior to convulsions). Thoroughly to test the efficiency of heparmone they permitted all patients to continue their usual diet, and limited their activities only to the point consistent with pregnancy in the normal woman. Heparmone, used to the point of neutralization, was always followed by improvement, and left but little to be desired. Hence, the infrequency of symptomatic or supplementary medication. The ready control of convulsions, marked reduction of blood pressure in the true uncomplicated eclamptic, rapidity with which coma has disappeared, hourly increase of urinary output (self-retaining catheter always inserted), and equally marked improvement in all other symptoms has enabled the eclamptic to continue until the beginning of labor. This series, consisting of eclamptic and preeclamptic cases, is not considered as final proof of the value of heparmone; but the fact remains that no preeclamptic woman developed convulsions, even though complicated by a preconceptional nephritis, and fourteen consecutive patients with eclampsia recovered, except one who had convulsions for five days before treatment and was moribund when first seen. Every case seems to have a neutralizing dose which relieves all symptoms, except that in the nephritis cases the blood pressure remains at the level consistent with the previous pressure of the individual, but convulsions do not occur, and all cases have been allowed to continue their pregnancy. All cases in convulsions when first seen have been successfully treated and interference avoided."

Cholin as a Possible Suprarenal Hormone.—In The Journal, January 14, p. 156, appears an abstract from the Santa-Fé Médico, Rosario de Santa Fe, entitled "Colin as a Possible Suprarenal Hormone." The word "colin" should read "cholin."